CORRELATES OF THE SOCIAL RECONSTRUCTION VARIABLES AND SELF-PERCEPTIONS OF LEARNING ABILITIES AMONG OLDER ADULTS

By

EVELYN JUNE KELLY

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By

Evelyn June Kelly

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This study analyzed the extent to which the social reconstruction model explained variations in the self-perceptions of learning abilities of older adults. A second area of analysis included the demographic variables of residence, age, gender, former work, education, and marital status. The social reconstruction variables were locus of control, self-labeled competence, self-related health, and the functionalistic ethic. The learning variables included a self-assessed learning statement, intellectual aging, and achievement motivation.

The participants were selected from adults age 65 or over residing in Marion County, Florida, using a proportional stratified sampling technique. The sample was comprised of 5 subjects from long term care facilities, 10 from congregate living facilities, and 85 living independently in the community. Data were collected during July 1985.

Three hypotheses were generated from the results of the Perception of Learning Questionnaire, a composite of the work of Lachman, Sherman, and Kuypers and Bengtson. Data were analyzed using correlation coefficients and multiple regression analysis. Statistical significance at the 0.05 level and beyond was used to test the null hypotheses.

Demographic variables of residence, age, education, former work, and marital status correlated with both the social reconstruction and learning variables. Gender was the only demographic variable that had little or no relationship to the other variables. The social reconstruction variables were found to be significantly correlated with measures of self-perceived learning ability, intellectual aging, and achievement motivation. Moderately strong correlations of social reconstruction variables and learning variables were indicative of the heuristic value of the model for descriptive and prescriptive intervention in education. A cognitive reconstruction model integrating perceptions of learning with social reconstruction was proposed.

CHAPTER I
INTRODUCTION

The origin of the apothegm, "You can't teach an old dog new tricks," is unknown, but the spirit of these words still lives on in the minds of people. No stereotype is more prevalent than the demented old person sitting in the rocker staring meaninglessly into space. Many normal, healthy elderly adults, who are very capable of learning, have accepted this tenet as their ultimate fate. In fact, studies of groups including children, teenagers, health workers, adults, physicians, and old people themselves have reinforced the negative stereotype that mental deterioration is inevitable (Bekker & Taylor, 1966; Drake, 1957; Kogan & Shelton, 1962; Tuckman & Lorge, 1953).

Statistics from the National Institute on Aging (NIA) have revealed that the number of people over 65 and the rise in the proportion of older to younger people are the most startling changes of the century. By 2030, the elderly will represent a projected 17-20% of the country's population (National Institute of Aging, 1983). This shift in the population will have profound social, economic, medical, and educational consequences.

Shifts in demography demand changes in attitudes. A society cannot withstand one in five of its population perceived as useless and unproductive. Education cannot endure the younger and middle groups so wholeheartedly embracing inaccurate mythology. Bandura (1977, 1981) argued that although one of the major goals of education is cognitive skill enhancement, an equally overlooked feature is the improvement of self-knowledge and self-perception and how these improvements affect cognitive functioning.

A new paradigm for the role of older adults in learning is imperative. Rosenmayer (1980) asserted that the position of the elderly adult in Western society "can only be reoriented and changed if viable ideals, 'existential paradigms,' become visible and receive some social support" (p. 60). Education must have a role in providing that visibility.

Statement of the Problem

In the decades of the sixties and seventies adult educators developed a number of classes, workshops, and lectures for older adults. Efforts to make these programs more attractive have appeared in the literature (Kaufman, 1968). Other adult educators have dealt with environment, teaching method, orientation, semantics, and psychological interaction of teachers and student (Hiemstra, 1972; Hixson, 1968; Kidd, 1963). There have been numerous calls for lifelong learning or continuing education for older citizens (Carnegie Commission of Higher Education, 1973; Knowles, 1980).

All of these programs have assumed that formal education is a good thing, and elderly people should take advantage of course offerings. Yet, with all these concerted efforts to reach older adults, the Commission of Non-Traditional Study (1973) found that interest and participation in organized educational activities declined sharply after age 65. Harris and associates found (1975) that 27% of people 65 and older felt they were too old to learn. Thirteen percent of those surveyed did not have enough time, and a half-million thought learning was too expensive.

Explanations for nonparticipation and attitudes toward learning must be tied to a complex of social and psychological factors. If educators working with the elderly could relate and identify these factors, a prescriptive guide for both theory and practice could be developed.

One of the most promising heuristic models to come out of gerontological literature of the past decade is the "social reconstruction syndrome" of Kuypers and Bengtson (1973). This model represents a comprehensive social-psychological framework that incorporates elements of the social system, self-concept, and labeling theories.

The model has both descriptive and prescriptive values. From a descriptive point of view, the reconstruction process illustrates the way in which many elderly individuals overcome the effects of the physical, social, and material losses of old age. The prescriptive value of the model lies in the potential for practice as a framework for planning intervention points and approaches.

Covey (1980) and Suttle (1982) have noted there is a deplorable lack of theory in the field of adult education. There is a need for educators to analyze theoretical explanations of attitudes about learning and reasons for the older adults' nonparticipation in provided educational offerings. Kuypers and Bengtson call their social reconstruction syndrome a "model of normal aging" (p. 18). No reference is given to learning perceptions of elderly people in developing the model. Yet, several educational variables are implied in such elements as self-labeling as incompetent, atrophy of skills, and role loss. The literature has not identified any studies showing that the social reconstruction model has been applied to perceptions of learning. The problem here is to investigate the relationship of the social reconstruction model with perceptions of learning, intellectual aging, and motivation to learn.

Purpose of the Study

The purpose of this study was to analyze the extent to which the social reconstruction model explained variations in self-perceptions of learning abilities of older adults. A second area of analysis included the demographic variables of residence, age, gender, former work, education, and marital status. The variables identified from the Kuypers and Bengtson social reconstruction model were locus of control, self-related competence, self-rated health, and acceptance of the functionalistic ethic. Self-perception of learning variables consisted of a self-assessed learning statement, perceptions of intellectual aging, and achievement motivation.

To accomplish the purpose of the study, three major hypotheses were investigated. They are stated in null form.

1. There is no relationship between each of the six demographic variables of residence, age, gender,

former work, education, and marital status, and each of the social reconstruction and learning variables.

2. There are no significant relationships among the variables of locus of control, self-related competence, self-rated health, and the functionalistic ethic.
3. There are no significant relationships among the social reconstruction variables and self-assessment of learning ability, intellectual aging, and achievement motivation.

Background and Justification

Theoretical formulations of the relationship between social expectations and behavior change provide a useful framework for examining aging-related learning perceptions. Two formulations which have been developed specifically with regard to the elderly are the cognitive theory of personality (Thomae, 1970) and the social reconstruction syndrome (Kuypers & Bengtson, 1973). A third, self-efficacy theory (Bandura, 1977, 1981) is also relevant to perceptions of learning.

Kuypers and Bengtson described the social reconstruction syndrome as a cycle of increasing competence based on social system inputs intended to reverse the negative effects of a social breakdown syndrome. Initially developed to explain the origin of mental disorder in a general population, the "social breakdown syndrome" (SBS) was offered as a sensitizing model, which "explains something of the pecular relationship between the elderly person whose social system is contracting and the broader environment within which he lives" (Kuypers & Bengtson, 1973, p. 186).

The malignant cycle of the social breakdown syndrome was initially introduced by Gruenberg and Zusman (1964) and related to chronic mental illness. The seven stage formulation of the development of negative psychological functioning has these elements.

1. Precondition of susceptibility
2. Dependence on external labeling
3. Social labeling as incompetent
4. Induction into a sick, dependent role
5. Learning of "skills" appropriate to the new dependent role
6. Atrophy of skills
7. Identification and self-labeling as sick or inadequate (Zusman, 1966, p. 364)

Kuypers and Bengtson (1973) related the above elements to elderly people, who begin with a precondition of susceptibility conditioned by society's tendency to label the aged, due to physical decrement, as deficient or incompetent. The labeling tends to induce the person to a sick and dependent role, with the result of atrophy of skills. This loss leads to self-labeling as inadequate and feeds back to the initial precondition. (See Figure 1.)

The process of social breakdown is all too familiar in the lives of many elderly in our society. It represents not only increasing incompetence and dependency, but a conviction that with increasing age, intellectual decline is inevitable.

A salient theory related to the model of social reconstruction is the importance of perceptions of ability as presented by Thomae

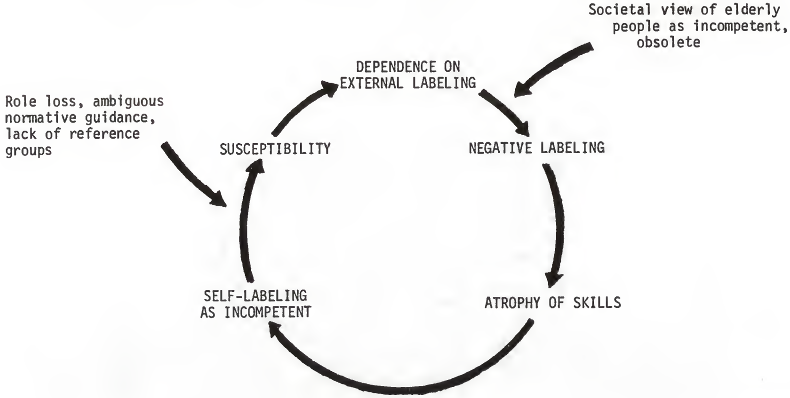
Societal view of elderly people as incompetent, obsolete
Role loss, ambiguous normative guidance, lack of reference groups
DEPENDENCE ON EXTERNAL LABELING
NEGATIVE LABELING
ATROPHY OF SKILLS
SELF-LABELING AS INCOMPETENT
SUSCEPTIBILITY

Figure 1. A systems representation of the social breakdown syndrome as applied to old age with negative inputs from the external social system

Source: Kuypers & Bengtson, 1973, p. 190; reprinted by permission of the publisher

(1970) in the cognitive theory of aging. Thomae described three postulates:

1. Perception of change rather than objective change is related to behavioral change (p. 4)
2. Any change in the situation of the individual is perceived and evaluated in terms of the dominant concerns and expectations of the individual (p. 6)
3. Adjustment to aging is a function of the balance between cognitive and motivational structure of the individual (p. 8)

Thomae further explained that the psychodynamic processes in the aging personality center around one dominant concern, which is the maintenance and restructuring of the balance between cognitive and motivational systems. To maintain this balance, the aged exhibit more and more revisions of the cognitive system instead of changes in the environment or in the motivational system. Eisdorfer (1967) called this theory of the changes of learning in the later years "tentative" because of the constant changes and adjusting.

Bandura (1977, 1981) conceptualized his self-efficacy theory in a broader social learning theory framework, but the idea is also relevant for self-perceptions of learning among the elderly. Self-efficacy is defined as one's orientation to personal mastery. One's conception of his own ability then is tied into motivation, effort, and behavior.

Kuypers and Bengtson (1973) diagrammed an ideal social reconstruction syndrome, with prescriptive interventions in the vicious cycle of social breakdown. The researchers identified three basic inputs, which are designed to reverse the breakdown cycle. The first input (A) calls for liberation of the older person from the functionalistic ethic of our society, which holds that performance in economic or other socially productive roles defines a person's status and worth. Input (B) from the social system calls for improved maintenance conditions as housing, health, nutrition, and transportation to reduce dependence and enhance self-reliance. Input (C) calls for the encouragement of an internal locus of control (Figure 2).

The social reconstruction model is powerful and has been described as an emergent theory of social gerontology that "provides what may be the most systematic statement of the interdependence between older people and their social world" (Hendricks & Hendricks, 1979, p. 201). Sherman (1984) has found the model important for planning intervention points and approaches in counseling older persons. The model should also have explanatory power in relating to learning and education of the elderly individual. The social reconstruction model has provided a descriptive base for this study of the relationships among selected demographic variables, the social reconstruction variables, and learning perception variables.

Scope and Limitations

The study was confined to a proportional stratified sample of white elderly adults living in Marion County, Florida, during July 1985. Only adults who were 65 years old and retired were included in the sample.

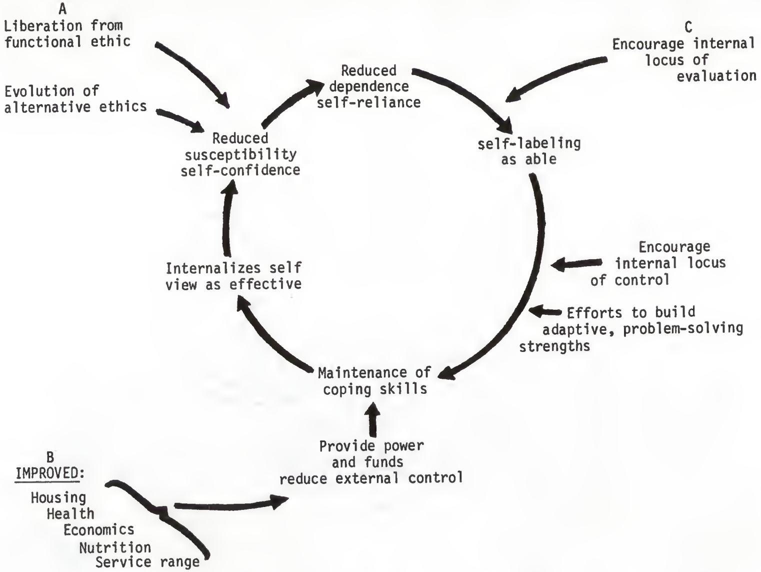
A
Liberation from functional ethic
Evolution of alternative ethics
C
Encourage internal locus of evaluation
Reduced dependence self-reliance
self-labeling as able
Reduced susceptibility self-confidence
Internalizes self view as effective
Encourage internal locus of control
Efforts to build adaptive, problem-solving strengths
Maintenance of coping skills
Provide power and funds reduce external control
B
IMPROVED:
Housing
Health
Economics
Nutrition
Service range

Figure 2. A possible social reconstruction syndrome

Source: Kuypers & Bengtson, 1973, p. 197; reprinted by permission of the publisher

The subjects were not randomly drawn from the total population of the county. Individuals interviewed from the institutions were chosen by an administrator according to their alertness and coherence. Interviews of those individuals living independently in the community were limited by access to older adults who would permit use of their time for the data collection.

Several limitations were inherent within the design of the study and were typical of those found in field study research. Disadvantages common to such studies may be balanced by the realistic context of the study, which is most appropriate for meaningful generalization of results (Isaac & Michael, 1971).

Any inference relative to the variables of the study used to describe all older adults is invalid to the extent that the sample was taken from only one county in Florida. The population of elderly adults in Marion County was assumed to be similar to elderly adults living in the central part of the state.

The instrument, as a paper-and-pencil self-report survey, was subject to response bias and faking. The Likert scale introduces problems with "rater-set," where the subject may tend to overrate, underrate, or tend to the center of the response scale (Isaac & Michael, 1971). It was assumed the instrument would be readable and the directions were given clearly.

While the correlation enabled the study of the extent to which variations in one variable are associated with the other, findings did not imply a causal relation. There were no means of controlling or identifying all the variables that might have affected the results of testing.

Definitions

Aged, elderly people, older adults—The terms aged, elderly people, and older adults are used to designate those 65 or older. This arbitrary age is used not because of any actual change but because it is the usual age of retirement.

Social breakdown syndrome (SBS)—SBS states the individual's sense of self, the ability to mediate between self and society, the orientation to personal mastery are functions of the kinds of social labeling experienced in life.

Social reconstruction syndrome (SRS)—SRS is a socio-psychological system in which the elderly reconstruct their personal systems to cope with the losses of aging.

Personal control—This is a self-report variable which indicates to what extent the individual believes that outcomes or performances are due to personal doing as opposed to forces outside the self (Lachman, 1984, p. 4).

Internal locus of control—This is the belief that actions are responsible for outcomes in life.

External locus of control—Outside forces as fate or powerful others determine what happens in life.

Intellectual aging—This is the conception that learning abilities are declining simply because years are passing.

Self-efficacy—Self-efficacy is personal mastery.

Summary

The social reconstruction syndrome is a powerful, comprehensive model, which incorporates elements of the social system, self-concept, and labeling theories, as they might be applied to problems of aging in our society. The model has both descriptive and prescriptive values. The descriptive value of the model may establish a point of view for educators to understand the complex psychosocial aspects in working with elderly adults. The prescriptive element of the model may relate to how and where educational interventions may be used to change attitudes and behavior.

CHAPTER II
REVIEW OF THE RELATED LITERATURE

Chapter II describes pertinent research relating to the social reconstruction variables of locus of control, labeling and stereotyping, and the functionalistic ethic. Research relating to self-perceptions of learning will include cognitive theory, perceptions of intellectual aging, and motivation. Each variable used for analysis will be considered in a separate section of the review.

Locus of Control

The locus of control variable is not unique to the social reconstruction model. Kuypers and Bengtson did not specifically describe locus of control in their controlling model (Figure 1), but did include in their prescriptive social reconstruction syndrome statements such as "encourage internal locus of evaluation" and "encourage internal locus of control" (Kuypers & Bengtson, 1973, p. 197). The researchers pointed out, "the person must experience the source of his action, the locus of control, as resting with himself (p. 196).

In this research locus of control will be divided into three domain-specific scales as originated by Levenson (1974) and developed by Lachman, Baltes, Nesselroade, and Willis (1982). The dimensions of internality, chance, and powerful others give versatility and provide individual predictors of correlates not available in a unidimensional scale.

Little is known about perceived control, especially in adulthood and old age (Weisz, 1985). Lachman (1984, 1985) reviewed 14 studies of locus of control in the elderly and found the results were very inconsistent. Some studies (Bradley & Webb, 1976; Lachman, 1983) showed internal locus of control decreased in later life, while others (Lachman, 1984; Saltz & Magruder-Habib, 1982) showed an increase or no significant change. Lachman's explanations for discrepancies have to do with the research design and use of unidimensional scale as Rotter's I-E Scale (1966). She designed a multi-dimensional, domain-specific scale which broke items down to chance, powerful others, and internal scales. Lachman predicted further understanding of the links between personal control and intelligence may have important implications for promoting intellectual functioning and psychological well-being in later life.

The internal control dimension refers to personal mastery. Endorsement of internal items indicates a belief that one's own actions can be effective (Lachman et al., 1982). Bandura (1977) acknowledged the mediating role of locus of control that if outcomes are attributed to internal sources (e.g., ability), then performance expectations are likely to be changed accordingly. If control is believed to be external, then expectations are less likely to be modified as a result of performance feedback.

The chance dimension refers to the belief that events are random and due to external forces such as fate or luck (Lachman et al., 1982). They believe that nothing can be done to preserve or modify intelligence.

Change for the worse is inevitable. Haber (1984), a historical gerontologist, traced the development of the idea of inevitable physical and mental deterioration in American history and society as a direct product of industrial revolution, scientific knowledge, and shifts in meaningful roles for elderly people.

The powerful others element of control relates to a belief in external forces that are nonrandom and due to the influence of powerful people. Lachman's scale measures dependence and reliance on other people for accomplishing intellectual tasks, due to the belief that others are better able to carry out the task.

The powerful others variable may depend on the environment. Older adults may be more vulnerable to stress due to physiological losses associated with old age, are more often dependent on others for their daily needs, and more often reside in institutions that promote learned helplessness. To intervene as a powerful other in the life of an internal, community dwelling elderly is likely to produce conflict. Molinari and Niederehe (1984) found that in an institution where powerful others play a large part in daily life, satisfactory adjustment may be contingent on an external belief system. The researchers, using Levenson's Internal, Powerful Others, and Chance scales found a significant relationship linking a pattern of high internality and low belief in powerful others with depression in the elderly. The rationale of the use of the domain-specific scales is illustrated by such research that enables a distinction between those who must depend on powerful others from those externals, who believe fate or chance controls what happens.

The role that personal control plays in intellectual aging has been investigated in several studies. Rodin (1980) considered whether changes in control affect cognitive or memory performance. Conversely, Lachman and Jelalian (1984) investigated whether changes in cognitive performance affects personal control. Kuypers (1971), working with an abbreviated locus of control instrument, found internal elderly adults to be more competent in coping, less defensive, more cognitively complex, and intellectually superior. The emphasis of research on the role of control with children (Lefcourt, 1981) has been with intellectual growth and implications for education. In contrast, research with the elderly has been the relations between personal control and intellectual aging (maintenance versus the decline of functioning) (Lachman et al., 1982).

The intervention model of the Kuypers and Bengtson syndrome (1973) discussed competence as personal feeling of mastery and internal control.

> To enable the development of an internal locus of control, those who would envision themselves as serving the elderly must define as one of their major goals the systematic deinvestment of their power and control. They must acknowledge the experiential value to their clients of individual power and control. . . . Imagine an old-age home whose personnel and decision-making bodies are exclusively comprised of the elderly themselves. . . . Imagine a policy-forming committee in local government staffed by the elderly. . . . Imagine a program of continuing education entirely defined and run by the elderly. . . . (pp. 196-198)

Labeling and Stereotyping

The first stage of the model involves the pre-condition of susceptibility. Zusman (1966) stated that the social breakdown syndrome will occur only in persons with weakened or deficient inner standards. The person's "picture of who he is in relation to others, and how it is proper for him to act, is easily disturbed" (p. 188). As applied by Kuypers and Bengtson to the elderly, the "symptoms" of being old are associated with the negative attitudes and actions accorded the symbols of aging in today's society. "A strong case can be made that the elderly are likely candidates of susceptibility" (p. 188). Social changes experienced in later life create a vacuum concerning one's personal action and position in the wider society. Information the person does receive points to incompetence, uselessness, and obsolescence.

Zusman's second step led to an excessive dependence on cues. The elderly have the additional disadvantage of vague or ill-defined labels. Labeling and stereotyping are deeply embedded in American culture and history. A new field of historical gerontology sheds much light on this phenomenon. "Those who would understand adult development and aging are beginning to realize that historical studies can be as illuminating as the most recent findings from the laboratory or field situation," wrote R. Kastenbaum (1984, p. 309), editor of International Journal of Aging and Human Development. Calling for contributions for a new section of the journal, "Historical Perspectives," he has underlined the importance and expected contribution that history may play in how elderly people perceive themselves.

How old would you be if you didn't know how old you was?" Satchel Paige, a black baseball player, who did not know his real age, pitched a no-hit game at about the age of 60 (Carlson, 1983, p. 3). His question sums up the inquiry into people's perception of their own aging and the spirit of the emerging field of historical gerontology.

Haber (1984) stated that the connotation of the word "senile" and the negative image it evokes today have not always existed. To be senile meant to be old and bore little relation to disease or dementia. Being old was value neutral, could be a valuable part of life, and even enjoyed a slightly positive connotation. In 1794 Thomas Jefferson wrote that he looked forward to the day he exchanged the "roar and tumult of the bulls and bears for the prattle of my grandchildren and senile rest" (as cited in Haber, 1984, p. 41).

In 1797 an eminent physician, Benjamin Rush, in Medical Inquiries and Observations, stressed the continued capabilities of most elderly persons. Studying a group of octogenarians, he found that although some had faulty memories of the recent past, they generally retained their intellectual capacities. Even a decayed body did not dictate the inevitable loss of reason. Rush endorsed the concept of mental immortality; the spirit and intellect would outlive the material side of a person's nature (as cited in Haber, 1984).

Gutman (1981), drawing on cross-cultural research, observed that traditional folk societies integrate the aged into their sacred belief system. This linkage of older people to spiritual resources was an important ingredient of psychological well-being. He interpreted psychosis in later life as a hectic attempt to find the basis of self-esteem normally supplied to the elders by culture.

The nineteenth century was devastating to the old. Scientific research, especially from Paris, challenged the idea that the old could live without loss of their abilities or reason. Mid-nineteenth century doctors, such as P. C. A. Louis and M. F. X. Bechat, through postmortem examinations, determined that by merely growing old the mind would degenerate (Haber, 1984). This biological model of aging led to a complete reformulation in the psychology of elderly adults. Rush had contended the loss of memory was of little consequence; the Paris physicians determined the loss of reason was only a matter of time.

Agreeing with Haber's observation of the nineteenth century, Cole (1984a) analyzed 1,000 Protestant sermons written between 1800 and 1900. He found the thought turned from late Calvinist, which encouraged individuals to accept old age and to prepare for death, to the "civilized" models, which encouraged the maintenance of health, denial of aging as long as possible, and development of inner character to compensate for the depreciations of aging. Toward the end of the century, the scientific world view, which worked a slow erosion of religious tradition, deprived many Americans of the rich source of value in old age (Cole, 1984a).

Haber (1984) quoted Charles Mercier, a Paris physician, who in 1890 epitomized the spirit of Victorian America.

> The process is a continuous, gradually progressive loss. Conduct, intelligence, feeling, cease to exist. . . . The decadence of old age is a dementia, a deprivation of the

> mind. It is a normal and physiological dementia, the natural and inevitable result of gradual subsidence . . . into stillness. (p. 43)

By the early twentieth century, the notion of unavoidable and inevitable senility had become well entrenched in medical literature and the minds of people. Auchenbaum (1984) described how modernization altered attitudes about age. These attitudes did not develop suddenly or dramatically. The transformation was subtle giving "fresh twists to commonplace perceptions and the unintended consequences of maintaining traditional mores" (Auchenbaum, p. 310).

Haber (1984) has stated the medical connotation of senile has continued to the present day. The term has been applied to a wide variety of diseases, and to be senile means to be unavoidably infirm. Gerontologists have objected adding these ideas reflect the unenlightened medical beliefs of the nineteenth century. Cole (1984a) said we have focused attention of treatment of attitudes toward aging, and consequently old people emerge as recipients of society's benevolence, objects of contempt, or products of historical forces as demography, social structure, and political economy.

No section on stereotyping and labeling would be complete without referring to the negative language used generally to depict the elderly. "Ageism" is a recognized entry in the American Heritage Dictionary of the English Language (Davis, 1982) and is defined as "discrimination based on age, especially against middle-aged and elderly people" (Neussel, 1982, p. 273). Ageism is distinct from all other forms of discrimination because it cuts across all of society's traditional classifications as gender, race, religion, and national origin. Age becomes a category with negative connotations, but because of the ambiguity surrounding membership, the targets of the negative attributes are unclear.

Ageist terms are derogatory and demeaning because they depict older people as possessing largely undesirable traits and characteristics. Relatively few favorable expressions allude to the elderly as positive age-specific attributions (e.g., mature, mellow, sage, venerable). Neussel divided ageist language into categories. One group has a deprecatory impact because people are demeaned only on the basis of age. Examples are "bag, bat, hag, coot, codger," normally preceded by the adjective "old." Other terms relating to the elderly such as declining years, second childhood, over the hill, twilight years insinuate decay, decline, or foolish behavior. Butler (1975) described the cumulative effects of individual and national ageism as devastating, allowing us to dehumanize older adults and making it easier to oppress the group. The subjugation is achieved through the labels that devalue the elders. If members of the group are perceived as deviating from accepted societal norms, then they will be susceptible to the self-labeling of mental and physical incompetence as described by Kuypers and Bengtson in the social reconstruction syndrome.

Neussel (1982) also discussed intervention strategies to attack the problem of ageism linguistics. First, a task force of all responsible members of national organizations concerned would be formed and charged with the responsibility of providing guidelines.

for massive distribution. The set of guidelines must be voluntary and address the major issues of distortion, degradation, exclusion, and subordination. The ultimate purpose of the project would be public education to help demythologize many popular misconceptions of the heterogeneous group.

Functionalistic Concept

The functionalistic ethic concept is unique to the Kuypers and Bengtson model and relates to role loss, ambiguous normative guidance, and lack of reference groups. Major life commitments and the value bases of the middle years are likely to persist in the later adult years. The elderly person bases his self-worth and looks to social acceptance through a commitment to the ethic of personal-worth-through-social-utility (i.e., productivity) (Roscow, 1967). Given this standard, the social utility of the elderly is negatively valued; there is a decreased status and the development of susceptiblity in an entire age-grade.

Neugarten and Moore (1968) underscored the increased saliency of inner life in the late adult years and this "increased interiority" should indicate freedom from external cues. Roscow (1967), however, argued that this freedom from social guidelines signals normlessness, social marginality, and contributes to feelings of rootlessness, alienation, and anomie. The age-grading systems have defined a period of "old age" and the reality of age-appropriate behavior; yet, there is little evidence of clearly defined expectations concerning what the older person should do during this period of life.

Former roles begin to shrink, as retirement, widowhood, death of friends, and decreasing physical mobility leave the individual less connected to his familiar personal world (Cumming & Henry, 1961; Palmore, 1968). Bengtson (1969) in a cross-national study of aging roles suggested men in their seventies have low activity as club members, civic-political participants, and church members; roles are slightly higher as a friend, neighbor, and acquaintance and highest in family roles as parent and grandparent.

Roscow (1967) pointed to the lack of appropriate reference groups for older adults to pattern behavior. The reference group seems to be people in the middle years. Maddox (1966) discussed the formal event of retirement, citing how little attention is given to the nonwork status. Lopata (1972) and Silverman (1973) discussed that for the aging female who becomes widowed there is a lack of any kind of institutional preparation and few prescriptions for behavior.

In January 1921 an Atlantic Monthly article entitled "Old Age" opened with these words:

> After well-nigh half a century of almost unbroken devotion to an exacting profession, I lately retired. . . . Now I am divorced from my world, and there is nothing more to be said of me save the exact date of my death. (Hall, 1921, pp. 23-24)

The words of G. Stanley Hall, educator and social scientist, reflected the poignant self-perception of an aging man, who began the reversal of the aging decrement of the last century. His work, Senescence, represented the first major work in gerontology and blended historical themes of religion, science, and mortality. Cole (1984b) called Senescence a prophetic book, which presciently forecasted the transformation of old age and the growth of gerontology.

Jung (1933) reported that many persons found little meaning or purpose in the afternoon of life. Vischer (1967) wondered whether "there is any sense, any vital meaning in old age, in man's decline" (p. 32). Roscow (1974) claimed that American culture provided old people with "no meaningful norms by which to live" (p. 48).

Erikson (1964) noted the importance of the way people perceive themselves in entitling his last stage of development ego integrity versus despair.

> As we come to the last stage, we become aware of the fact that our civilization does not harbor a concept of the whole of life . . . our lives are on a one-way street to success—and sudden oblivion. (p. 132)

Schaie (1973), in analyzing the positions of Looft, Peterson, and Sparks, agreed with the position that we must not pay attention to chronological aging but the perception of where life is for that person. He incriminated the middle class for causing a major share of the problems of older citizens by deciding on an a priori basis that old age is synonymous with intellectual and physical decrement and with loss of social effectiveness and self-esteem.

Sparks (1973) in a paper, "Phenomenology and Gerontology," questioned the fundamental assumption in gerontology—that aging exists. In a philosophical discussion relating time to quantum physics, he distinguished between kronos, the passing of measurable calendar time, and kairos, referring to time as fullness or crisis periods. These time concepts distinguish between chronological aging, which all must experience, and experiential aging, which relates to attitudes, concepts, expectations, and reactions to the environment. Sparks is an advocate of antigerontology, the elimination of experiential aging.

In the intervention model (Figure 2), Kuypers and Bengtson take a relatively pessimistic view of society's willingness to offer power and opportunity in the roles of older adults. The development of freedom from the social-worth ethic must be developed individually with personal definitions of meaning and purpose. With personal evaluation of alternative ethics and shifts in demography, a slow liberation from the functional ethic may evolve.

Self-Perceptions of Learning Abilities Research

Research on intellectual aging and learning abilities has focused primarily on objective indicators of performance. An enormous research literature dealing with learning abilities and cognition of older adults exists. Wass and Olejnik (1983) analyzed cognitive research over the past decade and concluded the generalizability of recent research on cognition and learning is extremely limited. Results seem to depend on several factors including (1) the definition of intelligence, (2) the means by which intelligence is assessed, (3) the research design used to answer the question (p. 324).

Subjective appraisal of performance, including expectation and attributions, appear to play an important role in the process

(Lachman, 1983; Zarit, Cole, & Guider, 1981). The variables identified for study of self-perceptions of learning abilities include self-perceptions of learning studies, subjective appraisal of intellectual aging, and motivation, and self-efficacy.

Knowles (1980) described one of the great moments in adult education that occurred at the annual meeting of the American Association for Adult Education in Cleveland in 1927. Edward L. Thorndike challenged the accepted tenet, "You can't teach an old dog new tricks," by suggesting that persons up to 70 years of age continue to learn, but at a slower rate. Thorndike (1928) also indicated that older adults often underestimate their ability to learn, have narrower interests, and hold attitudes and values that are not conducive to learning.

A few studies of the self-perceptions of older adults as learners have been done. Some of these have been related to reasons for class attendance and program offerings. Check and Wurzbach (1984) conducted a study to determine how men and women over 65 perceive learning and whether they thought age was a deterrent. They administered a questionnaire to those living in intermediate care facilities (ICF) and in apartments of a minimum care facility. Some differences were noted between minimal and ICF respondents, who complained of more difficulty with memory and health. Most of the subjects expressed strong belief in lifelong learning.

March, Hooper, and Baum (1977) studied the attitudes of older citizens toward lifelong learning. To determine interest in a free audit program and attitudes toward education, 99 subjects were interviewed. From their contacts only one subject interviewed actually enrolled in their university program although several indicated interest. Their findings failed to support the thesis that "education begets education." Several researchers (Johnstone & Rivers, 1965; Riley & Foner, 1968) indicated that those who attend classes when they are old usually have attended similar classes in their youth. March et al. argued that it is necessary for those attempting to provide educational programming for the elderly first ask what their needs are and how these needs can best be met.

Ingram (1979) suggested older adults need education for change and knowledge that is useful, with more emphasis on the affective domain. Rebok and Offerman (1983) suggested that self-efficacy theory can serve as a unifying framework for elucidating the nature and course of behavioral competencies in older college students. Older adults entering college have initiated a self-evaluative process which appears to be motivated by intrinsic goals involving self-improvement than by external criteria such as academic success (Goodrow, 1975; Schaie, 1977). Meichenbaum (1974) argued that older adults in formal situations are especially vulnerable to self-doubting and initial failure.

Several studies—Birren and Woodruff (1973), Carnegie Commission of Higher Education (1973), McClusky (1971)—have concluded that it should be widely acknowledged that the current cohort now in the sixties and older had as young people a limited and not very satisfying experience with education. March et al. (1977) concluded this experience has led them to eschew formal classroom learning in old age in favor of active daily living, which is perceived as learning experience.

Williams, Denney, and Schadler (1983) asked a group of elderly adults how they felt about their education with this question: "Some say their education had trained them to deal with the problems that one would face years ago, but not the problems of the world today. Do you feel this is the case?" (p. 153). Only 13% said their education had not adequately equipped them to deal with many of the problems they meet in life today.

Perceptions of Intellectual Aging

The case has been strongly made that affective factors strongly influence self-perceptions (Thomae, 1970). Older adults' acceptance of stereotypes of learning and aging should mediate their self-assessments. Memory is probably the area where the stereotype of aging is most pronounced (Dixon & Hultsch, 1985).

Old people frequently express concern about loss of memory. Lowenthal and Berkman (1967) in a community survey of San Francisco indicated that one-half of persons over 60 reported serious memory problems. Kahn, Zarit, Hilbert, and Niederhe (1975) found an even higher proportion than one-half in geriatric screening programs. The most common complaint was that memory for recent events is poor but recall from the remote past is adequate. Perlmutter (1978) administered a 60-question memory questionnaire to 64 adults in their twenties and sixties. Subjects expected their memories would get worse with age; an analysis of variance of composite scores of expectation of memory decay indicated that older subjects had greater expectation of memory loss than younger; less educated subjects had greater expectation of memory loss than the more educated. There were no significant sex differences on this matter.

While complaints of poor memory are typically considered to reflect actual functioning, several studies have found discrepancies between reports of poor memory and test scores, with the person's performing better than self-evaluation would indicate (Gurland, Fleiss, Goldberg, Sharpe, Copeland, Kelleher, & Kellet, 1976; Kahn et al., 1975; Lowenthal & Berkman, 1967; Perlmutter, 1978).

Kahn et al. (1975) emphasized that age stereotypes of failing memory led to a self-fulfilling prophecy. They observed that older people who experience occasional absentmindedness, such as might happen at any age, often mistakenly attribute forgetfullness as an age-related deficit. Depressed people were more likely to make the negative self-evaluation. In a study that included subjects with normal brain function, they reported subjective memory complaints were significantly correlated with depression but not with poor memory complaints. Even among the organically impaired, all of whom had marked memory loss, complaints were made only if the person was also depressed. Gurland et al. (1976) found a similar relation between memory complaints and depression.

Zarit et al. (1981) in two studies investigated four memory training strategies and their effects on subjective memory complaints in elderly adults. Pre- and postevaluations revealed significant improvement among the memory training subjects only. Subjective memory complaints fluctuated independently of performance, indicating that concern about poor memory may reflect expectations about old age rather than declining abilities.

Williams et al. (1983) asked individuals between the ages of 65 and 75 questions regarding which of their cognitive abilities had changed and what factors were responsible for such age changes. With respect to memory, the reports corresponded with memory research, which has indicated that certain types of memory may decline with age. With respect to problem solving, the reports did not correspond. Research has indicated abilities probably decline, while the elderly reported their problem solving increased with age. Factors mentioned were experience and taking more time to solve problems. These findings disagreed with Carey (1958) who concluded that poor problem solving performance, especially among elderly women, was caused by their less favorable and often deprecatory attitude about their problem solving ability and the general negative set which they bring to the task.

Whitbourne and Weinstock (1979) stated cognitive processes such as perception, memory, learning, problem solving, and intelligence cannot be looked upon in isolation. The adult's self-image, motivation, attitudes, and roles all together form identity. Changes in adulthood are similar to the crises of adolescence. Both change in appearance, but there is still a continuity of self. When people realize they are considered old by society, the self-concept is affected. How this changed physical appearance is interpreted depends on how fully the person accepts society's negative feelings.

Sherman (1985) identified self-esteem as an indicator of morale, stating there is little doubt that a self-esteem factor is implicit in the self-labeling and self-evaluation aspects. Lachman et al. (1982) correlated Lawton's PGC Morale Scales: Attitude toward Own Aging to the PIC morale factor relating to intellectual aging. Lachman (1983) related morale to one's opinion about current level of intellectual functioning relative to the past; morale encompasses beliefs about the nature and direction of change in one's own intellectual process.

Achievement Motivation

Perceived ability has been found to influence the amount of effort expended on a task and conditions during task performance (Bandura, 1977). Individuals with low self-estimates of ability are more likely to use less effort and to be more distracted by anxiety and self-doubts. Intellectual performance decrements for some elderly persons, then could be a function of lowered performance expectations and concomitant increase in performance anxiety. Rodin (1980) has found clear evidence that many elderly adults have adopted low performance expectations and high anxiety levels in intellectually demanding situations.

Suls and Mullen (1984) investigated the standards by which elderly adults evaluate their own abilities and how these standards differ from those used earlier in the life cycle. Social comparison refers to comparisons with other persons to gauge the relative standing.

Temporal refers to comparisons of one's present performance on similar tasks to gauge improvement or deterioration. The authors have proposed that the elderly use temporal comparisons when younger people use social. Comparisons with past achievements may permit one to assess present capabilities, but in the case of the elderly may emphasize deterioration of their abilities. The access to social comparison may be one advantage of age-segregated communities. Understanding how people evaluate themselves has an important implication for understanding self-esteem, morale, and intellectual aging.

A group of researchers have made the distinction between actual cognitive performance (knowing) and the more subjective predictions about or attributions of performance (knowing about knowing). Called metaintelligence or metacognition, these researchers began with studies in child development (Brown, 1975; Flavell, 1979) to determine if a subject can evaluate or predict performance on an intelligence test.

Bandura (1977) emphasized the role of self-assessment of performance as an important process in self-efficacy. The metacognition studies of Perlmutter (1978) showed that older adults tend to be fairly accurate in their estimation of their own performance. Lachman (1984) found that self-assessment of performance related to cognition in the metacognition field included both personality and cognitive dimensions as confidence in one's own ability in predicting performance, knowledge about problem solving strategies, anxiety, and motivational interest in performance. Metacognition ties together the cognitive and noncognitive social fields in contributing to perceptions of behavior.

Lachman (1983) found older people may avoid a task completely and this attitude has ramifications in maintenance and improvement of intellectual skills. Labouvie-Vief (1976) reported in normal elderly no significant proportion of variance in intellectual behavior may be accounted for by maturational change. Age-related performance differentials may be accounted for by socio-cultural contingencies. She reported most elderly people come to anticipate reduced competencies in themselves.

Bandura (1981) and Weisz (1985) have speculated that elderly adults may be likely to underestimate their abilities in intellectual domains with detrimental consequences for performance. However, contrary to those speculations, Lachman et al. (1982) observed elderly adults did not consistently underestimate their performances particularly on the tests on which they did poorly. Given the importance of accurate self-assessments of ability (Bandura, 1981), the results of Lachman et al. are encouraging although consequences of overestimation should be addressed in the future.

Rodin and Langer (1980) found that restructuring the environment to make it more demanding and then motivating the older adult to increase cognitive abilities lead to improvements in memory that are generalizable. They did not measure self-esteem directly but found the experimental subjects were rated by workers as happier and more involved.

Rodin and Janis (1979) hypothesized established referent power (persons have referent power for those who preceive them as benevolent and accepting) was an important way to increase motivation and increase commitment. Eliciting and sometimes reciprocating self-disclosure were factors that are critical in helping a person establish referent power. Rodin (1980) stated that what is needed is not simply attention or pampering which fosters dependency, but rather increased opportunities for esteem building and self-control.

Since a component of this study involves long-term care, several items on institutionalization will be mentioned. MacDonald and Butler (1974) stated that institutional settings may actually discourage competence related behaviors and elicit dependency and helplessness.

Cross-sectional studies comparing institutionalized elderly adults to those living in the community have found the former group have reduced capacity for independent thought, depressive mood, low self-esteem, and other negative attributes (Lakin, 1960; Mason, 1954). Comalli and Werner (1960) studied the concept of regression (that elderly exhibited a structural similarity to the cognitive functioning of children) in institutions and community. After giving four tests of cognitive functioning, they concluded the institutionalized showed greater regression than the community group. Lieberman (1961) described the negative effects of institutional living with subjects showing impaired cognitive functioning, more preoccupation with the body, and less emotional response.

Summary

Kuypers and Bengtson argued that elderly people in Western society are susceptible and dependent on social labeling, role loss, vague and inappropriate normative information, and lack of reference groups. Review of the literature supports and expands the consequences of external labeling as loss of coping abilities and development of an internalized sense of incompetence.

The social reconstruction variables of locus of control, labeling and stereotyping, and the functionalistic ethic have been analyzed in the literature. The role of locus of control, the belief that one experiences the source of his action as resting within himself, has been investigated in several studies with inconsistent results. The problem was attributed to the measurement of locus of control by unidimensional instruments. A domain-specific approach dividing locus into three areas of internality, chance, and powerful others has been proposed and is used in this study.

Labeling and stereotyping of the inevitable physical and mental deterioration of older adults have roots in Western industrial and scientific progress. The emerging field of historical gerontology has described the foundations for the development of ageism, the labeling of a group of people with deprecatory attributes only on the basis of age.

The functionalistic ethic concept is unique to the Kuypers and Bengtson model and relates to role loss, ambiguous normative guidance, and lack of reference groups. Researchers have agreed there are no definitive norms or role models for older adults in our society.

Subjective appraisal of intellectual ability and performance, including expectations and attributions, appears to play important roles in learning. Perceived ability has been found to influence the amount of effort expended on a task. While most research has focused on objective studies of intelligence, the roles of affective elements as perceptions of intellectual aging and achievement motivation have begun to emerge as important aspects of learning.

The review of the literature in Chapter II has described the research on the key variables of the Kuypers and Bengtson syndrome and the research related to self-perceptions of learning. The major question of this research was the extent of correlation of these social reconstruction variables with self-perceptions of learning abilities in older adults.

CHAPTER III
DESIGN OF THE STUDY

This research was conducted to analyze to what extent the key variables of the social reconstruction model of Kuypers and Bengtson explain variations in self-perception of learning abilities of the older adults. A second area of analysis included the demographic variables of residence, age, gender, former work, education, and marital status. To accomplish these objectives, a questionnaire was constructed from the works of Sherman (1984), Lachman et al. (1982), and Kuypers and Bengtson (1973). This instrument tested the key social reconstruction variables of locus of control, self-related competence, self-rated health, and the functionalistic ethic. The self-perceptions of learning variables included a self-assessed learning statement, intellectual aging, and achievement motivation. A sample of 100 adults over 65 and retired were administered the questionnaire.

Sample of the Study

According to a report by the University of Florida College of Business Administration released in April 1985, Marion County had 29,510 elderly adults 65 and over and ranked sixteenth in Florida in the number of older adults (Lee, 1985). Older adults live in institutions for care and in the community. There are 4 long-term care facilities (LTC) in the county and 15 congregate living facilities

(CLF). A majority of the elderly people live independently, some of whom are in age-segregated communities.

Because of the subgroups described here, a proportional stratified sampling technique was used for data collection. An effort was made to select the sample in proportion to the size of each stratum in the population. Long term care subjects comprise about 5% of the elderly population; so five people from this stratum were chosen at random. Older adults living in congregate facilities make up about 10% of the population; hence, 10 were chosen. The remainder were elderly people living independently; 85% or 85 people were selected. The proportional sampling assured representation of the various groups in the study. However, since the characteristics of the entire population were the main concern, the stratification was only for data collection.

The population from which the sample was drawn was varied and diverse. For ease of access, the survey was conducted through intact groups or by a leader in certain neighborhoods, who invited friends in to participate. Since a random selection was not possible, especially for those living independently, a large number of subjects was chosen from different areas of the county to insure an approximate normal distribution of population characteristics. The institution lists were considered for random selection, but individuals had been preselected by administrators as those who were coherent and communicative.

Subjects were procured in the following manner. The owner of activities directors in the nursing homes and congregate living facilities were contacted for the best way to gather the interviews. Ocala Geriatrics (LTC), The Retreat (CLF), and Mt. Vernon Lodge (CLF) enthusiastically invited the research and made lists of coherent clients. From the list of 26 names a random sample of 5 from the LTC and 10 from the CLF were contacted for personal interview.

The community dwellers were chosen by contacting group leaders from county organizations that work with elderly people. Church groups, American Association of Retired People (AARP), Retired Teachers, Senior Citizens Services, and various area recreation departments were contacted. Questionnaires from 100 persons were gathered from July 9 to July 19, 1985.

Description of the Instrument

The first step in the development of the instrument was to describe the variables to be tested. The pertinent demographic data considered were residence, age, gender, education, former work, and marital status. Former work was measured on a two-factor index with one category designated as labor and blue collar (including homemakers) and the other professional such as teachers, business owners, and engineers.

The instrument developed as two parts. Part One consisted of demographic data of residence, age, gender, education, former work, and marital status. Part Two consisted of a questionnaire incorporating a self-rating of competence, health, and learning ability. Selected scales of the ADEPT PIC Inventory and the functionalistic ethic questions of Sherman were used. Participants were asked to rate their perception of their general coping ability and to assess their health. Older adults' self-ratings of health have been shown to be reasonably accurate when compared to physicians' ratings (Larue, Bank, Jarvik, & Hetland, 1979).

To measure the variables of locus of control, intellectual aging, and motivation, scales 1, 2, 3, 4, and 6 of the ADEPT PIC Inventory were used. The PIC Inventory was developed at Pennsylvania State University under the direction of Paul Baltes and Sherry Willis with Margie Lachman, graduate assistant (Lachman et al., 1982). The inventory consisted of six scales to assess older adults' evaluation of intellectual aging. The scales are comprised of 12 items each and then random ordered on a 6-point Likert scale. Five of the six scales were used for this research and the six points were collapsed to four.

The validity and reliability of the instrument were presented by Lachman et al. (1982) and related to the transcontextual parent personality scales of Levenson's Locus of Control (1974), Jackson's PRF-E for achievement (1974), and the Lawton PGC Morale Scale (1975). The validity studies showed correlations of moderate magnitudes ranging from .35 to .49. All interface scales showed acceptable levels of reliability ranging from .74 to .88.

The questionnaire was administered according to Lachman's directions as indicated in Appendix B. In a telephone conversation she gave permission to use one or more scales of this instrument.

The instrument tested seven variables. The social reconstruction variables were locus of control, self-related competence, self-rated health, and the functionalistic ethic. Locus of control included the three domain-specific items of internality, chance, and powerful others. The learning variables were a self-assessed learning statement, intellectual aging, and achievement motivation. Figure 3 shows the organization of the variables.

Social Reconstruction Variables

Locus of control (Lachman)
    Internality
    Chance
    Powerful others

Self-related competence (Kelly)

Self-rated health (Kelly)

Functionalistic ethic (Sherman)

Self-perception of Learning Variables

Self-assessed learning statement (Kelly)

Intellectual aging (Lachman)

Achievement motivation (Lachman)

Figure 3. Organization of the social reconstruction and self-perception of the learning variables

The variables of locus of control, self-related competence, self-rated health, and functionalistic ethic were operationalized in the following manner.

Social Reconstruction Variables

Variable 1—Locus of Control: Lachman's context-specific scales of the ADEPT PIC Inventory were used. Scale 1, internality, measured internal responsibility for modifications or maintaining intellectual functioning as lying within one's own control. Seven statements (numbers 1-7) related to internality.

1. When paying in a restaurant for meals or in a store for clothes, I am able to understand the bill.
2. I'd be able to keep an accurate record of my expenses so as to avoid financial problems.
3. If I want to work at it, I'm able to figure out quite a few puzzles and similar problems.
4. As long as I exercise my mind, I will always be on top of things.
5. I know if I keep using my memory I will never lose it.
6. It's up to me to keep my mental faculties from deteriorating.
7. I could remember important telephone numbers if I practiced them.

Scale 2, chance, measured the belief that there is nothing that can be done to preserve or modify intelligence; change in ability is inevitable or due to external forces. Nine statements (numbers 8-16) related to the chance scale.

8. I have little control over my mental state.
9. What I learn now is determined by what I was taught when I was younger.
10. My problem solving ability depends on how healthy I am.
11. There's no doubt it will become harder for me to add and subtract numbers.
12. It's inevitable that my letter writing ability will deteriorate.
13. I have no chance to improve my thinking abilities at my age.
14. There's nothing I can do to preserve my mental clarity.
15. My mental acuity (sharpness) is bound to decline.
16. It's inevitable that my intellectual functioning will decline as I get older.

Scale 3, powerful others, measured dependence and reliance on other people for accomplishing tasks, due to the belief others are more able. There were eight items (numbers 17-24) in this subscale.

17. I wouldn't be able to figure out postal rates on a package without the postman's help.
18. I can't figure out sales prices of items unless someone helps me.
19. In order for me to have a nutritional diet, a specialist would have to plan my meals.

20. I need someone to help me when it comes to solving difficult puzzles or games.
21. I can only understand instructions after someone explains them to me.
22. I'd prefer another person to show me how to solve number problems rather than work them out myself.
23. I'd call the T.V. network for the program schedule rather than try to read it on my own.
24. I couldn't learn to solve novel word problems without help.

Variable 2—Self-Related Competence: Response to a statement on the same Likert type scale used in the PIC Inventory measured self-related competence. The statement was "I am able to contend with most situations most of the time."

Variable 3—Self-Rated Health: Participants were asked to rate their health from very good to very poor.

Variable 4—Functionalistic Ethic: The one variable unique to the model is the functionalistic ethic which describes role perception. Four questions relating to role operationalized this concept. Answers were ranked on a four-point Likert scale. Sherman (1984) operationalized this variable in his study of social reconstruction and morale. He used the following four statements:

1. A person isn't worth much when he or she is no longer able to carry on as a productive member of a community.

2. A person's worth does not depend on how good a citizen, parent, or worker but simply how he or she is as a human being.
3. Unless I feel I have accomplished or done something other people value; I feel quite worthless.
4. When you are no longer a contributing member of society by functioning in such roles as worker, parent, you really can't feel you have any value as a person.

Sherman stated that these four statements were selected by a factor analysis of data that included a larger pool of statements that had been constructed on an a priori basis to reflect the functionalistic ethic. Based on the analysis of data from an earlier example of respondents from a senior service center, the four items showed the highest degree of consistency. Reduction to four statements had the advantage of brevity, which was important for testing elderly respondents.

Self-Perception of Learning Variables

Variable 5—Self-Assessed Learning Statement: Self-perceived learning ability was rated by the direct question which asked the respondent's learning ability as good, pretty good, not too good.

Variable 6—Intellectual Aging: The opinion about the current level of intellectual functioning relative to the past was measured by Scale 6 of the ADEPT PIC Inventory (numbers 25-36). Statements assessed beliefs about the nature and change in one's own intellectual processes.

25. I don't remember things as well as I used to.
26. The older I get the harder it is to think clearly.
27. I'm just as good at puzzles as I ever was.
28. I'm less efficient at managing my time than I used to be.
29. I can learn new things as well as always.
30. I used to be much better at working with numbers.
31. I'm as smart as ever when it comes to defining words.
32. It's becoming more hopeless to figure out complicated schedules as I get older.
33. My letter writing skill has gone downhill.
34. I think I'm just as good at number problems as I have always been.
35. I have to use a lot more mental energy for solving difficult problems now than I used to.
36. I'm not as good at remembering telephone numbers as when I was younger.

Variable 7—Achievement Motivation: Lachman's Scale 4 (numbers 37-48) measured achievement motivation, which she defined as the desire to try and accomplish cognitive tasks and interest in new activities.

37. I really don't care whether I learn anything new.
38. It's important that I am very accurate when working with numbers.
39. I have no desire to fill out my own tax forms.
40. I'm highly motivated to learn new things.
41. Keeping a close watch on my diet is important and worthwhile to me.

42. If I studied a map carefully I could figure out how to get around in a strange place.
43. I take a great interest in solving puzzles.
44. It means a lot to me to be able to write coherent letters to my friends and family.
45. It's no use teaching me new tricks: I'd rather stick with my old ones.
46. I'd like to be good at solving word problems.
47. It gives me great satisfaction to read on a wide range of topics.
48. I'm interested in figuring out how to get the most for my money when shopping.

Data Collection

The researcher personally interviewed the congregate and long term care subjects. The instrument was read to 6 of the 15. In the groups living independently, the researcher explained the purpose of the research, its implications, and gave the instructions for completing according to the sheets in Appendix B. A total of 20 minutes was actually taken, including time for explanations and collection of the instruments. The researcher's plan was to continue to visit groups until the minimum of 100 questionnaires had been completed.

A pilot study was conducted with a group from Rolling Greens, who completed the questionnaire and answered supplemental questions of opinion about the study. The maximum time for completing the form was 15 minutes. The people found the questionnaire understandable, interesting, and not too long. Changes were made in some typographical errors and unclear expressions. However, since Lachman's scales had been validated, changes were not made when people suggested certain items were not pertinent. Number 39, "I have no desire to fill out my own tax forms" had the most comments.

Treatment of the Data

Data collected were prepared for computer processing. Each response was tallied by assigning values of 1 for strongly agree, 2 for agree, 3 for disagree, and 4 for strongly disagree. Appendix C shows the procedure for scoring each item.

Frequency statistics of the demographic variables were counted by the researcher. Descriptive statistics of means and standard deviation were calculated by the program SAS. Correlations of social reconstruction, learning variables, and demographic variables were analyzed using the SAS procedure CORR to get correlation coefficients. Multiple regression analysis predicting learning variables by the social reconstruction variables were calculated. Each learning variable was used as a dependent variable with the social reconstruction variables as independent variables. Partial correlations of each learning variable with each social reconstruction variable controlling for the other variables were calculated.

The following null hypotheses were tested at the .05 level of significance:

1. There is no relationship between each of the six demographic variables of residence, age, gender, former work, education, and marital status and the social reconstruction and learning variables.
2. There are no significant relationships among the variables of locus of control, self-related competence, self-rated health, and the functionalistic ethic.
3. There are no significant relationships among the social reconstruction variables and self-assessment of learning ability, intellectual aging, and achievement motivation.

Summary

Key variables from the Kuypers and Bengtson social reconstruction model were operationalized to investigate their relationship to selected measures of self-perceptions of learning abilities of the elderly adults. A second area of analysis included the demographic variables. Using a proportional stratified sample, 100 retired individuals over 65 were asked to respond to an inventory incorporating the works of Lachman, Sherman, and Kuypers and Bengtson. Correlation coefficients were calculated with demographic, social reconstruction, and learning variables. Regression models were developed for each learning variable with the social reconstruction variables.

CHAPTER IV
PRESENTATION OF THE RESULTS

The purpose of this study was to analyze the extent to which the key variables of the social reconstruction model of Kuypers and Bengtson explained variation in self-perceptions of learning among older adults. A second area of analysis included the demographic variables of residence, age, gender, former work, education, and marital status. Responses from the Perceptions of Learning Questionnaire from 100 participants were used in analyses. Correlation coefficients were computed to analyze the relationships among demographic variables, social reconstruction variables, and learning perception variables. Regression models were developed to assess the contributions of the social reconstruction variables to each learning perception variable. This chapter includes a description of the sample used in this study, the results of the data analyses testing the three stated hypotheses, and the results of the regression models.

Demographics of the Sample

The instrument was administered to 100 subjects from three institutions and from groups in seven different areas of Marion County, Florida, in July 1985. The county sources of participants are given in Table 1.

Six demographic items were included for comparison with the social reconstruction and learning variables. The data indicated there

Table 1. County sources of participants

		Sample N
Rolling Greens Retirement Area		12
Heritage Hills Community		7
The Retreat (CLF)		3
Belleview (south) Church Keenagers		10
Ocala Geriatrics (LTC)		5
Mt. Vernon Lodge (CLF)		7
First Baptist Church Forever Young		26
Oakcrest Church Super Seniors		20
Dunnellon (west) Retirement Village		7
Reddick (north)		3
	Total	100

were major strengths in correlation with both the social reconstruction and learning variables. The six demographic variables were residence, age, gender, former work, education, and marital status.

Residence

Residence was dichotomized into those living in institutions (LTC and CLF) and those living independently in community dwellings. Fifteen people were in the institutional sample, and the remaining 85 lived independently in the community. Table 2 describes the residence of the sample.

Table 2. Residence of the sample

Residence	Number
Institution	
Males	4
Females	11
Subtotal	15
Independent living	
Males	30
Females	55
Subtotal	85
Total	100

Age

The age range of the 100 subjects was from 65 to 99. People from 65 to 69 made up 32% of the total sample. Fifty-one percent of the sample were in their seventies while 14% were in their eighties and 3% were in their nineties. The age categories of the sample are presented in Table 3.

Table 3. Age of the sample

Age	Sample n
65-69	32
70-74	32
75-79	19
80-84	7
85-89	7
90-99	3
Total	100

Mean = 73.61
SD = 6.99

Gender

There were 34 males and 66 females in the sample as described in Table 4. Twelve percent of the males were 65-69 years old while 17% were in the seventies and 5% of the males were in their eighties. Females in the 65-69 group represented 20% of the population. Thirty-four percent of the females were in their seventies and 9% in their eighties. The three nonagenarians were female.

Former Work

Former work was probably the most subjective category as the participants were divided into two large groups. One group included factory workers and blue collar type jobs. Housewives who never worked

Table 4. Gender of the sample

Age	Male	Female	Total
65-69	12	20	32
70-74	11	21	32
75-79	6	13	19
80-84	3	4	7
85-89	2	5	7
90+	0	3	3
Total	34	66	100

outside were included in this group. The other section included white collar and professional types. The highest category of former work represented in this sample was the clerical group with 23. Also in category 2 were 9 in sales, 9 in nursing, and 8 in education. There were 4 engineers and 1 minister. Category 1 represented the labor and blue collar workers. Of this group there were 17 laborers, 4 farmers, 4 waitresses, 2 beauticians, and 1 trucker. Ten housewives indicated they had never worked outside the home. Former work categories are presented in Table 5.

Education

Education statistics are presented in Table 6. The mean number of years of formal education was 11.89 with a standard deviation of 2.75. The range was from 5 years to 19 years. Twelve percent of the sample had completed grades 5 through 8, while 54% had completed from 9 to 12 years of school. Thirty-four percent had attended a postsecondary

Table 5. Former work of the sample

Former Work	Number
Category 1	
Laborers and factory workers	17
Housewives	10
Farmers	4
Waitresses	4
Beauticians	2
Truckers	1
Miscellaneous	2
Subtotal	41
Category 2	
Clerical	23
Sales	9
Nursing	9
Education	8
Engineering	
Chemical	2
Hydrology	1
Civil	1
Ministry	1
Miscellaneous	3
Subtotal	59
Total	100

institution. The largest number of subjects indicated the 12-year category, while grade 10 was the second highest with 14. There were 15 college and postgraduate indications. The greatest number of years of education were those of a minister, who had 19.

Marital Status

The marital status of the sample was dichotomized into married and all others including single, widowed, and divorced. The

Table 6. Education of the sample

Grade Completed	Number
5	2
6	1
7	1
8	8
Subtotal	12
9	6
10	14
11	2
12	32
Subtotal	54
13	9
14	8
15	2
16	10
17	4
19	1
Subtotal	34
Total	100

Mean = 11.89
SD = 2.75
Minimum = 5
Maximum = 19

Table 7. Marital status of the sample

Marital Status	Male	Female	Total
Married	30	29	59
Single	1	2	3
Divorced	0	0	0
Widowed	3	35	38
Total	34	66	100

sample revealed there were 30 married males and 29 married females, to make a total of 59. There were 1 single male and 2 single females. There were 3 widowed males and 38 widowed females. Marital status statistics of the sample are presented in Table 7.

Questionnaire Results

The instrument, which was developed from the works of Lachman, Sherman, and Kuypers and Bengtson, was called the Perception of Learning Questionnaire. Analysis of the results yielded scores for internality (I), chance (C), powerful others (PO), competency statement (CS), health statement (HS), functionalistic ethic (FE), learning statement (LS), intellectual aging (IA), and achievement motivation (AM). Six scores reflect the social reconstruction variables and three the learning variables. Composite results of scores from the Perceptions of Learning Questionnaire are presented in Table 8.

Internality

Internality (I) was quantified by low scores indicating less internality or external locus of control and high scores indicating more internality or a tendency for internal locus of control. The highest possible internality score was 28. Scores ranged from 7 to 28, with a mean of 22.21 and a standard deviation of 5.011.

Chance

In the chance (C) variable, high scores indicated an adherence to the belief that change in ability is inevitable or due to external forces. The possible top number was 36. Of the 100 sampled the mean was 22.65 with a standard deviation of 5.40 and a range from 10 to 36.

Table 8. Scores on Perceptions of Learning Questionnaire

Variable	N	Range		Highest Possible Score	Mean	SD
		Minimum	Maximum			
Internality	100	7	28	28	22.21	5.0110
Chance	100	10	36	36	22.65	5.4000
Powerful others	100	8	32	32	17.06	6.0200
Competency statement	100	1	4	4	1.56	0.7545
Health statement	100	1	3	4	1.71	0.5737
Fucntionalistic ethic	100	4	15	16	9.36	9.3890
Learning statement	100	1	3	3	1.75	0.0692
Intellectual aging	100	12	45	48	30.15	7.3110
Achievement motivation	100	12	45	48	34.23	7.5288

Powerful Others

The powerful others (PO) variable ascribed high scores for dependence and reliance on other people for accomplishing intellectual tasks and low scores for self-reliance. With an optimum number of 32, scores ranged from 8 to 32 with a mean of 17.06 and a standard deviation of 6.02.

Competency Statement

The competency statement (CS) was scored on a Likert type scale of strongly agree, agree, disagree, strongly disagree. The low scores indicated agreement with the statement "It's important to me that I be able to function on my own." With 4 as top, scores ranged from 1 through 4 with a mean of 1.58 and a standard deviation of 0.7545. The scores indicated this sample perceived functioning on their own as being important to them.

Health Statement

The health statement (HS) presented in Table 9 asked participants to rate their health very good, good, poor, or very poor. The number 1 indicated very good while 4 indicated very poor. The range was from 1 to 3 with a mean of 1.71 and a standard deviation of 0.5737. No one marked number 4—very poor. This sample perceived their own health as generally very good.

Functionalistic Ethic

The functionalistic ethic (FE) was measured with 16 as top score and a low score of 4, indicating adherence to the belief that

Table 9. Health statement frequencies

Response	Frequency
Very good	29
Good	65
Poor	6
Very poor	0
Total	100

people are not worth much when their former roles disappear. The scoring range was from 4 to 15, with a mean of 9.36 and a standard deviation of 2.389. This sample tended to adhere to the belief of the functionalistic ethic.

Learning Statement

The learning statement (LS) asked subjects to rate their own learning ability as very good, pretty good, or not too good. A low score (1) indicated a very good opinion with high score (3) not too good. The range was from 1 to 3, with a mean of 1.75 and a standard deviation of 0.0692. Table 10 shows the frequency of response and percentage of this variable.

Intellectual Aging

Intellectual aging (IA) related to one's opinion about the current level of intellectual functioning relative to the past. The low scores indicated a belief of inevitable deterioration while high

Table 10. Learning statement frequencies

Response	Frequency
Very good	33
Pretty good	62
Not too good	5
Total	100

scores indicated adherence to such statements as "I can learn new things as well as always." With 48 as the possible top score, scores ranged from 12 5o 45, with a mean of 20.15 and a standard deviation of 7.311.

Achievement Motivation

Achievement motivation (AM) scores indicated the desire to attempt new tasks. Low scores reflected such statements as "I really don't care whether I learn anything new." High scores indicated high motivation to learn. With 48 as top, scores ranged from 12 to 45, with a mean of 34.23 and a standard deviation of 7.5288.

Results of Testing the Null Hypotheses

Three hypotheses were postulated for this study. The hypotheses pertained to relationships among the variables of social reconstruction, learning perceptions, and demographic characteristics. The first two were tested by correlation coefficients and the last hypothesis by correlation coefficients and regression analysis.

The correlation analysis was useful in determining the degree to which two variables were related. Multiple regression showed how several variables acted together as predictors.

> Hypothesis One: There is no relationship between each of the six demographic variables of residence, age, gender, former work, education, and marital status, and each of the social, reconstruction, and learning variables.

Hypothesis One was tested by obtaining correlation coefficients of the demographic variables with scores on the social reconstruction variables of internality, chance, powerful others, competency statement, health statement, and the functionalistic ethic and the three learning variables.

Sherman (1984) related social reconstruction variables to morale variables of self-esteem, happiness, and scores on life-satisfaction (LSIA) and found no relationship between the morale variables and the demographic variables of age, gender, race, marital status, and social class. He found no perceptible patterns between demographic and morale variables. Results from the present study showed moderately strong relations between the demographic variables and not only the learning variables, but also the social reconstruction variables. The only demographic variable in this study which supported Sherman's research was gender.

Residence

Subjects' living conditions were in two categories. Group 1 consisted of those in a long term care facility or a congregate living facility. Group 2 was made of those living independently. The place of residence had correlations with internality of r = 0.65 and powerful others of r = -0.65, which is significant at the 0.0001 level. The other variables of chance, competency statement, and the functionalistic ethic had scores of r = -0.40, -0.46, and -0.49, respectively. All were significant at the 0.0001 level. The self-related health statement and self-assessed learning statement were nonsignificant. The learning variables of intellectual aging and achievement motivation were correlated at r = 0.56 and 0.67 at the 0.0001 level. Motivation was the most highly correlated with the place of residence than any other of the nine variables. Subjects' residence was highly correlated with every scale except the health statement and learning statement. (The place of residence correlations are presented in Table 11.)

McDonald and Butler (1974) in their study of institutions for elderly adults described the sterile, anti-intellectual conditions, where learned dependence is skillfully developed. Lakin (1960) and Mason (1953) found those in institutions had reduced capacity for independent thought and other negative attributes. Lieberman (1971) described the impaired cognitive functions when compared to community dwellers of the same age. This study supports that residents

Table 11. Correlations between social reconstruction and learning variables and place of residence

Variable	$\bar{r}$	p
Social reconstruction variables		
Locus of control		
Internality	0.65232	0.0001
Chance	-0.40252	0.0001
Powerful others	-0.65002	0.0001
Competency statement	-0.45884	0.001
Health statement	-0.16434	0.1023 (ns)
Functionalistic ethic	-0.49012	0.0001
Learning variables		
Learning statement	-0.17324	0.0848 (ns)
Intellectual aging	0.56299	0.0001
Achievement motivation	0.67087	0.0001

Note: (ns) = nonsignificant.

of institutions have low internality (r = 0.65) compared to community dwellers. The same group also would tend to depend on others (PO -0.65) to take care of their everyday tasks. Care facility residents adhered to the ethic of uselessness to society (FE -0.50) and that mental deterioration is inevitable (C -0.40).

The most startling correlations were between residence and achievement motivation (r = 0.67) and intellectual aging (r = 0.56). Comalli and Werner (1960) hypothesized that institutionalized adults exhibit less motivation and more cognitive regression than community dwellers of the same age.

Age

The second demographic variable—age—was correlated with the social reconstruction variables and learning variables and showed moderate relations with all items except the health statement and the learning statement. However, age did not correlate as strongly as other demographic variables with the learning and social reconstruction variables even in the significant statistics. Internality (r = -0.46), intellectual aging (r = -0.47), and achievement motivation (r = -0.45) were all significant at the 0.0001 level. Correlations between age and the social reconstruction and learning variables are given in Table 12.

Age was correlated with every variable except the health statement and learning statement. The sample was necessarily biased toward those chosen and in relatively good health. The sample did not include those who were ill in care facilities or at home. Items show

Table 12. Correlations between social reconstruction and learning variables and age

Variable	r	p
Social reconstruction variables		
Internality	-0.45752	0.0001
Chance	0.27552	0.0055
Powerful others	0.46994	0.0001
Competency statement	0.32061	0.0011
Health statement	0.19039	0.0578 (ns)
Functionalistic ethic	0.26763	0.0071
Learning variables		
Learning statement	0.15456	0.1247 (ns)
Intellectual aging	-0.46683	0.0001
Achievement motivation	-0.44798	0.0001

Note: (ns) = nonsignificant.

internality (r = -0.46) and powerful others (r = 0.46) correlated with age where chance was r = 0.28. The value of using the three locus of control scales rather than one general unidimensional scale can be seen in the scores on the three. The chance belief that change in abilities is inevitable is not as strongly correlated to age as is the belief that responsibility for maintenance of intellectual functioning (I) and dependence on other people for accomplishing intellectual tasks (PO). It would be expected that the older a person gets, the more dependent on others he/she may become because of health reasons; yet, the spirit of the statement, "It's up to me to keep my mental faculties from deteriorating" also seems to lessen with age. The findings of Labouvie-Vief (1976) showed that no significant proportion of variance in intellectual behavior may be accounted for by maturational change. She added that age-related performance and anticipated reduced competency may be accounted for by socio-cultural contingencies. The learning variable of intellectual aging is also related to expectation and correlated with age at r = -0.47. The learning statement was not significantly correlated with chronological aging. These learning variable scores of IA and AM confirm the studies of Perlmutter (1978), who found her subjects expected their memories would get worse with age. The perception of expected decrement with chronological aging fits into the labeling and expectations cycle of the Kuypers and Bengtson social breakdown syndrome.

Gender

The demographic variable of gender had the weakest correlation of any of the demographic variables with both the social reconstruction and learning variables. The only significant correlation was r = -0.20, p = .04 for chance, which indicated the men in this sample have more of the belief that changes in abilities are inevitable. Table 13 shows the results of correlations between the social reconstruction variables and learning variables and gender.

Male or female showed no significant correlation with internality, powerful others, competency statement, health statement, functionalistic ethic, the learning statement, intellectual aging, or achievement motivation. Perlmutter (1978) and Sherman (1984) also found no gender differences relating to memory or morale.

The only significant relation was with chance at r = -0.20 at the 0.05 level. Males adhered more to the belief that nothing can be done purposefully to preserve or modify intelligence and that they have little control over the mental state. These results are somewhat surprising and may support role reversal in male and female, as posited by researchers such as Neugarten and Moore (1968).

Former Work

Table 14 presents the correlations between former work and the social reconstruction and learning variables. This variable showed correlations in every item except the health statement, which was r = -0.174 and nonsignificant. The highest correlation was between former work and powerful others (r = -0.43, p = 0.0001). This

Table 13. Correlations between social reconstruction and learning variables and gender

Variable	r	p
Social reconstruction variables		
Internality	0.21670	0.8299 (ns)
Chance	-0.20385	0.0419
Powerful others	-0.07031	0.4870 (ns)
Competency statement	0.16084	0.1099 (ns)
Health statement	0.00518	0.9592 (ns)
Functionalistic ethic	0.03650	0.7099 (ns)
Learning variables		
Learning statement	0.15670	0.1195 (ns)
Intellectual aging	0.18600	0.0639 (ns)
Achievement motivation	0.02585	0.8061 (ns)

Note: (ns) = nonsignificant.

Table 14. Correlations between social reconstruction and learning variables and former work

Variable	r	p
Social reconstruction variables		
Internality	0.36130	0.002
Chance	-0.23965	0.0163
Powerful others	-0.42591	0.0001
Competency statement	-0.22262	0.0260
Health statement	-0.17416	0.0831 (ns)
Functionalistic ethic	-0.26721	0.0072
Learning variables		
Learning statement	-0.31024	0.0017
Intellectual aging	0.32181	0.0011
Achievement motivation	0.34658	0.0004

Note: (ns) = nonsignificant.

statistic indicated those in the category of labor and blue collar adhere to dependence and reliance on others due to the belief that others are better able to carry out intellectual tasks.

Former work was the most subjective of all the demographic variables. From the responses on the instrument the researcher had to place in category 1 labor and blue collar or in category 2 clerical and professional. The 10 women who indicated they had never worked were placed in category 1.

Former work was significantly related to internality ($r = 0.36$, $p = 0.0002$), i.e., the professional group had higher belief in intellectual functions as lying within their control. The highest correlation (PO $r = -0.43$, $p = 0.0001$) showed that those in blue collar and labor group relied more on other people to accomplish intellectual tasks. This group also tended to rate it less important for them to function on their own (CS $r = -0.22$, $p = 0.02$) and adhered more to the functionalistic ethic of being less value when roles in society are terminated. Category 1 workers also rated their learning ability as generally less than the category 2 (LS $r = -0.31$, $p = 0.0017$) and that their intellectual functioning now is not as good as it was in past years (IA $r = 0.32$, $p = 0.0011$). The one lone nonsignificant variable was the health statement, which did not relate to the former work of an individual.

Education

Table 15 gives results of education in relationship to the social reconstruction and learning variables. All correlations were

Table 15. Correlations between social reconstruction and learning variables and education

Variable	r	p
Social reconstruction variables		
Internality	0.42280	0.0001
Chance	-0.30295	0.0022
Powerful others	-0.45785	0.0001
Competency statement	-0.34354	0.0005
Health statement	-0.32107	0.0011
Functionalistic ethic	-0.30119	0.0023
Learning variables		
Learning statement	-0.35995	0.0002
Intellectual aging	0.34519	0.0004
Achievement motivation	0.45852	0.0001

significant, but not as strong as some of the other variables. Internality with $r = 0.42$, $p = 0.0001$, and achievement motivation with $r = 0.46$, $p = 0.0001$ showed most strength.

It seems reasonable that years of education would relate more positively with learning variables and possibly the social reconstruction variables. The range of education, which was from 5 to 19 years, was correlated significantly with the six social reconstruction variables and the three learning variables. While the mean education was 11.7, the range of the frequency was fairly well distributed, with 12 in the grades 5 through 8 range, 54 in the 9 through 12 range, and 34 in the postsecondary category. Years of education correlated most strongly with internality ($r = 0.42$, $p = 0.0001$), indicating those with lower education felt less potential for maintenance of intellectual functioning as being in their control.

The strongest correlation among the learning variables was education with achievement motivation, which indicated those with greater education are more motivated to try to do intellectual tasks. The more highly educated also tended to rate their health more positively ($r = -0.32$, $p = 0.011$) and had a higher opinion of their own learning ability ($r = -0.36$, $p = 0.0002$). Those with less education adhered more to the functionalistic ethic ($r = -0.30$, $p = 0.0023$) and to the precept that their intellectual functioning is not as good as in prior years (IA $r = 0.35$, $p = 0.0004$).

Marital Status

Table 16 presents the relationships between marital status and the social reconstruction and learning variables. Marital status was

Table 16. Correlations between social reconstruction and learning variables and marital status

Variable	r	p
Social reconstruction variables		
Internality	-0.36567	0.0002
Chance	0.28883	0.0036
Powerful others	0.41573	0.0001
Competency statement	0.30387	0.0021
Health statement	0.10293	0.3082 (ns)
Functionalistic ethic	0.24155	0.0155
Learning variables		
Learning statement	0.31024	0.0017
Intellectual aging	-0.34976	0.0004
Achievement motivation	-0.37843	0.0001

Note: (ns) = nonsignificant.

dichotomized into presently married and all others. Fifty-nine subjects, a majority of this sample, were married. Marital status correlated with all other variables except the health statement. Of the correlations the powerful others variable was positively related to marital status at r = 0.42, p = 0.0001, indicating married individuals in this sample are less dependent on other subjects.

Sherman (1984) in his New York sample found no correlation between marital status and happiness or self-esteem. This study showed strength between marital status and all variables with the exception of the health statement.

There was a moderate correlation between those not married and the powerful others variable. The singles indicated more reliance on other people for accomplishing intellectual tasks, due to the belief that others are better able to carry out such tasks. A possible explanation for this strength (r = 0.42, p = 0.0001) may be found in the studies of Molinari and Niederhe (1984), who contended the powerful others dimension may be especially related to depression. The physiological and psychological losses associated with widowhood, as mentioned in the studies of Cumming and Henry (1961), Palmore (1968), and Bengtson (1969), tend to make the person more dependent on others for their needs and more often reside in institutions that promote learned helplessness. The 15 subjects from the institutions were widowed with the exception of one single. Having this group in the sample might have biased the statistics to some degree.

Marital status also had significant figures that indicated marrieds were more internal in their outlook, considered themselves more competent, adhered less to the ethic that roles determine one's value. Singles ascribed more to the opinion that intellectual decline is inevitable (IA $r = -0.35$, $p = 0.0004$) and generally perceived their learning ability is not as good. The singles were not as motivated to learn new things and perceived they do not function as well intellectually now as they did in the past.

Hypothesis One that there are no relationships between the six demographic variables of residence, age, gender, former work, education, and marital status and each of the social reconstruction and learning variables can be rejected. The one nonsignificant variable was gender, which correlated with no other variable. The strength of the relationships was in midrange (0.21 to 0.67) and was consistent with several of the interrelationships of the variables themselves. Those who have high internality, motivation, positive outlook on aging are negatively correlated with chance, powerful others, and the functionalistic ethic. The demographic variables of residence, age, former work, education, marital status formed observable patterns. Whether the person was a male or a female made little difference.

Other Correlations

Correlations of the six demographic variables with each other are presented in Table 17. Of the correlations there were 20 variables that correlated in this sample population. The highest correlation was between education and work at $r = 0.66$, $p = 0.0001$.

All learning variables were significantly related to each of the other learning variables. Intellectual aging and achievement motivation showed most strength. Table 18 shows these relationships.

Table 17. Intercorrelations among demographic variables

Variable	1	2	3	4	5	6
Residence (1)		-0.50610* 0.0001	-0.65030 0.5203	0.39005* 0.0001	0.44337* 0.0001	-0.44699* 0.0001
Age (2)	-0.50610 0.0001		0.07196 0.4168	-0.23646* 0.0179	-0.16429 0.1024	0.39119* 0.0001
Sex (3)	-0.65030 0.5203	0.07196 0.4768		-0.12619 0.2109	-0.12904 0.2007	0.42664* 0.0001
Former work (4)	0.39005* 0.0001	-0.23646 0.0179	-0.12619 0.2109		0.66449* 0.0001	-0.21455* 0.0321
Education (5)	0.44337* 0.0001	-0.16429 0.1024	-0.12909 0.2007	0.66449* 0.0001		-0.21897 0.0286
Marital status (6)	0.44699* 0.0001	0.39119* 0.0001	0.42664* 0.0001	-0.21455* 0.0321	-0.21897* 0.0286	

Note: * = $p < 0.05$.

Table 18. Intercorrelations among learning variables

Variable	1	3	3
Learning statement (1)		-3.18000* 0.0013	-0.35948* 0.0002
Intellectual aging (2)	-0.31800 .0013		0.79902* 0.0001
Achievement motivation (3)	-0.35948* 0.0002	0.79902* 0.0001	

Note: * = $p < 0.05$.

Out of 54 correlations of demographic variables with social reconstruction variables, 40 were significant. Analysis of the data supports the rejection of the null hypothesis and permits a conclusion that there is a relationship between the social reconstruction variables and the demographic variables.

> Hypothesis Two: There are no significant relationships among the variables of locus of control, self-related competence, self-rated health, and the functionalistic ethic.

Locus of control variables were divided into three domain-specific scales of internality, chance, and powerful others. Internality described responsibility for modification or maintenance of intellectual functioning as being within one's control. High scores indicated one would ascribe to an internal locus of control, while low scores would indicate perception of external locus of control. The highest correlation ($r = -0.83$, $p = 0.0001$) was with powerful others, in which a high score indicated a dependence and reliance on other people for accomplishing intellectual tasks, due to the belief that others are better able to carry out such tasks. Internality was also negatively related to chance ($r = -0.58$, $p = 0.0001$), the belief that nothing purposefully can be done to modify intelligence; correlations were also significant for the competency statement at $r = -0.67$, $p = 0.0001$, health statement at $r = -0.33$, $p = 0.0009$, and the functionalistic ethic at $r = 0.60$, $p = 0.0001$.

Chance or adherence to the belief that control of aging is not within one's power was positively related to powerful others ($r = 0.60$, $p = 0.0001$), to the competency statement ($r = 0.39$, $p = 0.0001$), and to the functionalistic ethic ($r = 0.42$, $p = 0.0001$).

Powerful others related to all other social reconstruction variables. The weakest was to the health statement ($r = 0.29$, $p = 0.0029$).

The competency statement related to all other social reconstruction variables. The strongest was with internality ($r = -0.67$, $p = 0.0001$).

The health statement appeared to be the weakest of all social reconstruction variables with no relationship with chance or the functionalistic ethic. The strongest was with internality ($r = -0.33$, $p = 0.0009$).

The functionalistic ethic was correlated with all variables except the health statement. The strongest was with internality ($r = -0.60$, $p = 0.0001$).

The data correlating the social reconstruction component areas showed major strengths and are presented in Table 19. Since 26 out of 30 social reconstruction variables are correlated with each other at $p = 0.05$ level and higher, the data support a rejection of null Hypothesis Two and a conclusion that the social reconstruction variables are correlated.

Hypothesis Two tested each of the social reconstruction variables with the other social reconstruction variables. Lachman

Table 19. Intercorrelations of the social reconstruction variables

Variable	1	2	3	4	5	6
Internality (1)		-0.58006* 0.0001	-0.83162* 0.0001	-0.66829* 0.0001	-0.32628 0.0009	-0.59861* 0.0001
Chance (2)	-0.58006* 0.0001		0.59517* 0.0001	0.39232* 0.0001	0.11358 0.2605	0.41609* 0.0001
Powerful others (3)	-0.83162* 0.0001	0.59517 0.0001		0.52792 0.0001	0.29449* 0.0029	0.52847* 0.0001
Competency statement (4)	-0.66829* 0.0001	0.39232 0.0001	0.52792* 0.0001		0.20580* 0.0400	0.48259 0.0001
Health statement (5)	-0.32638* 0.0009	0.11358 0.2605 (ns)	0.29445* 0.0029	0.20580 0.0400		0.17273 0.0857 (ns)
Functionalistic ethic (6)	-0.59861* 0.0001	0.41609* 0.0001	0.52847* 0.0001	0.48259* 0.0001	0.17273 0.0857	

Note: * = $p < 0.05$; (ns) = nonsignificant.

et al. (1982) had determined the intercorrelation among the PIC Scales was of a very high magnitude, which suggested a more integrated structure of PIC Scales, especially in intellectual functioning. The findings from this study indicated strong significance in Lachman's five scales of internality, chance, powerful others, achievement motivation, and intellectual aging. The health statement had a weak correlation with Lachman's internality and powerful others, but was not significant with chance and the functionalistic ethic. The social variable of health labeling did not correlate with the belief that change in abilities is inevitable and due to external forces. A possible explanation is that the subject was asked to look at present health status and the chance variable measured perception of what may happen in the future. The lack of correlation of chance with the functionalistic ethic, which is value determined, may represent this same mode of thinking.

The social reconstruction variables were significantly correlated in 26 out of 30 items with a range of $r = 0.20$ to 0.83. There is statistical evidence that the social reconstruction variables are intercorrelated.

> Hypothesis Three: There are no significant relationships among the social reconstruction variables and self-assessment of learning ability, intellectual aging, achievement motivation.

Learning Statement

The statement "Rate your own learning ability" gave three choices of very good, pretty good, or not too good. This question was included to measure the labeling of self-assessed competence in learning. The hypothesis was tested by correlating the learning statement variables with the six social reconstruction variables. Correlation coefficients showed a relation between this variable and all other social variables except the functionalistic ethic. The strongest correlation was $r = -0.39$, $p = 0.0001$ with internality. Other significant relations were with the health statement at $r = 0.34$, competency statement with $r = 0.25$, and chance with $r = 0.19$. The results are presented in Table 20 and support rejection of the null hypothesis.

The learning statement was a rating of the individual's perception of learning ability. This statement was apt to be more reflective of the current mood of learning and an estimate of the coping ability as a learner. This question was interpretive to a degree. Also, the possibility that the subject may perceive that the researcher wanted a positive statement may enter into this type of evaluation. The respondents' perceptions of their current health and competency showed a significant relationship to the learning statement as they are the same type of question.

Internality, chance, and powerful others were also significantly related to the learning statement, but with less strength than with intellectual aging and achievement motivation. There was no

Table 20. Correlation of the social reconstruction variables with responses on the learning statement

Variable	r	p
Internality	-0.39614	0.0001
Chance	0.19719	0.0492
Powerful others	0.34544	0.0004
Competency statement	0.25269	0.0122
Health statement	0.33952	0.0005
Functionalistic ethic	0.11797	0.2424 (ns)

Note: (ns) = nonsignificant.

relationship between the functionalistic ethic score and the learning statement. The functionalistic ethic evaluated self and others in terms of their "productive" value to society and was possibly more value-laden. Relating one's own learning ability and the view of value to society did not seem to coincide.

Intellectual Aging

The social reconstruction variables all highly correlated with intellectual aging. Results of the analysis appear in Table 21. The highest correlation was negatively with powerful others ($r = -0.82$, $p = 0.0001$). Internality with $r = 0.80$, chance with -0.65, competency statement with -0.51, and the health statement at -0.29 followed in order.

Data from the Pearson correlation supports rejection of the null hypothesis. There is a strong statistical evidence that there is a correlation between the social reconstruction variables and perceptions of intellectual aging.

All the social reconstruction variables were significantly correlated with the intellectual aging variable. As can be expected, perceptions of intellectual aging, one's opinion about current intellectual functioning relative to the past, was most highly correlated with the powerful others scale, which measures dependence on others ($r = -0.82$, p. 0.0001). The strength is very consistent with internality, that one is responsible for maintaining intellectual functioning, and chance. A perceptible pattern developed that the respondents who were active, motivated, and growing did not look back

Table 21. Correlation of social reconstruction variables with intellectual aging

Variable	r	p
Internality	0.79824	0.0001
Chance	-0.64773	0.0001
Powerful others	-0.81764	0.0001
Competency statement	-0.51211	0.0001
Health statement	-0.29050	0.0034
Functionalistic ethic	-0.52355	0.0001

to compare to the past. Suls and Mullen (1984) found most elderly adults tend to compare their present learning abilities on a time or temporal basis. Evaluation on a temporal basis leads them to conclude their abilities have deteriorated when compared to the past. Young adults use a social comparison to peers and those around them. Yet, they did find that elderly individuals who lived in age-segregated communities may use a social basis for comparison.

Those adhering to an internal locus of control have decided their responsibilities lie in maintaining and improving their minds and depending on themselves for intellectual functions. The competency statement was only moderately correlated ($r = -0.51$) which is surprising as this is the statement of the importance of functioning on one's own. Possibly, the correlation was not higher because the other subscales gave practical implementation of several examples where the competency statement had only one. Also, this competency statement may be interpreted as relating to general living skills rather than intellectual functioning.

The functionalistic ethic was moderately correlated ($r = -0.52$) with intellectual aging. One would expect that given the fact that the functionalistic ethic evaluates self and others in terms of their "productive" value to society, there would be a negative relation between the ethic and intellectual aging in a population of retired, i.e., the smaller the functionalistic ethic score, the greater the feeling of inevitable degradation. There is a negative relationship which can be expected as those who are active will perceive themselves as making a contribution even though their former roles have possibly shrunk. They have expanded to new roles.

Achievement Motivation

Pearson correlation coefficients were obtained to explore possible relationships between achievement motivation and the social reconstruction variables. The strongest of all correlations in the entire series was between internality and achievement motivation ($r = 0.89$, $p = 0.0001$). A powerful negative correlation existed between powerful others and achievement motivation ($r = -0.86$, $p = 0.0001$). Other correlations in order were competency statement $r = -0.65$, chance $r = -0.56$, and functionalistic ethic $r = -0.31$. The results are presented in Table 22. As all correlations were significant, null Hypothesis Three was rejected. There is evidence to conclude a strong relationship exists between the social reconstruction variables and achievement motivation.

Bandura (1977) stated perceived ability has been found to influence the amount of effort expended on a task. Individuals with low self-esteem are likely to use less effort and be more distracted by anxiety and self-doubt. Rodin (1980) stated there is evidence that many elderly have adopted low performance expectations. The strength of all the social reconstruction variables with achievement motivation supports Bandura and Rodin. Correlation with the competency statement ($r = -0.65318$, $p = 0.0001$) showed moderate strength. Internality and powerful others were also correlated. As expected those who were dependent on others for intellectual help were not highly motivated. Again, internality scores were high, agreeing with the research of Kuypers (1971) that internals are more highly motivated than externals.

Table 22. Correlation of social reconstruction variables and achievement motivation

Variable	r	p
Internality	0.88747	0.0001
Chance	-0.56377	0.0001
Powerful others	-0.85631	0.0001
Competency statement	-0.65318	0.0001
Health statement	-0.30943	0.0017
Functionalistic ethic	-0.60498	0.0001

Regression Analysis for Hypothesis Three

Regression analysis is a statistical tool for evaluating the relationshp between one or more independent variables with a dependent variable. The six independent variables used in the regression model are presented below.

x_1: Subscores on the scale of internality which consisted of seven items

x_2: Subscores of the chance scale, which included nine items

x_3: Subscores on the scale powerful others, which included nine items

x_4: Health statement rating the item "How would you rate your health?" 1-4 very good to very poor

x_5: Response on the competency statement of item 49, "It's important to me that I be able to function on my own"; response 1-4 strongly agree, agree, disagree, strongly disagree

x_6: Subscore on items 50-53 for functionalistic ethic

The three dependent variables were

y_1: Learning statement with response of very good (1) to not too good for rate your own learning ability

y_2: Subscores on the intellectual aging scale, which consisted of 12 items

y_3: Subscores on the scale achievement motivation, which consisted of 12 items

The regression model used was

$$y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + e$$

The multiple regression model enables the analysis of the relationship between two variables controlling for the other variables of interest. The partial effects of the independent variables, controlling for other variables, are described by the partial regresssion coefficients in the multiple regression equation. The partial correlation coefficient (r) describes the degree of correlation between two variables controlling for the others. The squared partial correlation coefficient (r^2) represents the proportion of that variation in the dependent variable left unexplained by a set of controlled variables that can be explained by another variable.

The purpose of the study was to explore to what extent the social reconstruction variables (internality, chance, powerful others, competency statement, health statement, and functionalistic ethic) contributed to the most variance in each of the learning variables. Partial correlations were derived for the social reconstruction scores with each learning variable.

Table 23 presents the results of the multiple regression analysis for the learning statement. The overall test for goodness of fit of the regression equation was significant for the learning statement ($F = 4.569$, $df = 99$, $p = 0.0001$). The R^2 for the total model was 0.2277. All social reconstruction variables combined accounted for about 22.8% of the variation of the learning statement.

Table 23. Multiple regression analysis predicting the learning statement by the social reconstruction variable

Model	F	p > F	R^2
Total Model	4.569	0.0004	0.2277

Variable	Zero-order correlation	Partial correlation (r)	Square of partial correlation (r^2)	Beta	p > t	F for r^2
Internality	-0.39	0.19600	0.03800	-0.046194	0.0597	3.6900 (ns)
Chance	0.19	0.01260	0.00016	0.001630	0.9014	0.0150 (ns)
Powerful others	0.34	0.10360	0.01070	0.005990	0.7288	0.1200 (ns)
Competency statement	0.25	0.01111	0.00010	0.010700	0.9145	0.0116 (ns)
Health statement	0.33	0.23760	0.05640	0.242267	0.0210	5.5130*
Functionalistic ethic	0.11	0.15970	0.02500	-0.046041	0.1219	2.4360 (ns)

Note: * = $p < 0.05$; (ns) = nonsignificant.

Although the individual zero-order correlation from the correlational analysis of social reconstruction variables with the learning statement showed some significant variations, the magnitude of the coefficients were generally moderately weak. This leads to the question of the cumulative effect of the six reconstruction variables on variation in the learning statement.

Partial correlation results indicated that none of the variables contributed to the significance in the learning statement beyond the contribution of the health statement subscore. Health statement to the learning statement accounted for about 5.6% of the variance of the social reconstruction variables ($F = 5.513$, $p > t = 0.0210$, $r^2 = 0.056$). While the relation between health statement and learning statement was significant, it is clear that their magnitude was not great enough for the purpose of prediction.

Table 24 presents results of the multiple regression analysis predicting intellectual aging by the social reconstruction variables.

The total regression model for intellectual aging showed the overall test for the goodness of fit of the regression equation was significant ($F = 44.745$, $df = 99$, $p = 0.0001$). The R^2 for the total model was 0.7428. All social reconstruction variables combined accounted for about 78% of the variation of intellectual aging.

The partial correlation showed the powerful others variable with a first-order correlation of 0.4185 and the square of the partial correlation 0.1752. This r^2 indicated the powerful others variable explained about 18% of the variance in intellectual aging. Possibly

Table 24. Multiple regression analysis predicting intellectual aging by the social reconstruction variables

Model	F	p > F	R^2
Total model	44.754	0.0001	0.7428

Variable	Zero-order correlation	Partial correlation (r)	Square of partial correlation (r^2)	Beta	p > t	F for r^2
Internality	0.80000	0.2755	0.0700	0.459702	0.0069*	7.3969
Chance	-0.65000	0.2878	0.0800	-0.283520	0.0025*	9.6680
Powerful others	-0.81700	0.4185	0.1752	-0.502050	0.0001*	17.6400
Competency statement	-0.51700	0.0340	0.0010	0.228773	0.7424	0.1089
Health statement	-0.29000	0.0787	0.0060	-0.524585	0.4647	0.5380
Functionalistic ethic	-0.52355	0.0519	0.0020	-0.102536	0.6171	0.2520

Note: * = $p < 0.05$.

this powerful others variable could be used for prediction. The other significant partial regression coefficients were chance ($r = 0.2878$, $r^2 = 0.0800$) accounting for about 8% of the variation, and internality ($r = 0.2755$, $r^2 = 0.0700$) accounting for 7%.

Table 25 presents the results of the multiple regression analysis predicting achievement motivation by the social reconstruction variables. The total regression model for achievement motivation showed a very significant fit for the regression equation ($F = 85.449$, $df = 99$, $p = 0.0001$). The R^2 was 0.8465. All social reconstruction variables accounted for about 85% of the variation in achievement motivation.

In the partial correlation with each social reconstruction variable, there were three significant statistics. The powerful others variable had the most explanatory power with achievement motivation with an $r = 0.46490$ and $r^2 = 0.216100$. Powerful others accounted for about 22% of the variation in achievement motivation. Also, the partial analysis showed internality with an $r = 0.4575$, $r^2 = 0.2093$, accounting for 21% of the variation. The competency statement was significant with $r = 0.21339$, $r^2 = 0.04553$, accounting for 5% of the variation. As has been related, internality and powerful others have predictive power with achievement motivation. Chance, the health statement, and the functionalistic ethic were not significant.

Table 25. Multiple regression analysis predicting achievement motivation by the social reconstruction variables

Model	F	$p > F$	R^2
Total model	85.449	0.0001	0.8465

Variable	Zero-order correlation	Partial correlation (r)	Square of partial correlation (r^2)	Beta	$p > t$	F for r^2
Internality	0.88747	0.45750	0.209300	0.65294700	0.0001*	24.354200
Chance	-0.56577	0.00850	0.000072	-0.00596514	0.9346	0.000067 (ns)
Powerful others	-0.85310	0.46490	0.216100	-0.47880200	0.0001*	25.371300
Competency statement	-0.67318	0.21399	0.045530	-1.15737600	0.0388*	4.389000
Health statement	-0.30943	0.03910	0.001500	-0.21928000	0.7075	0.001500 (ns)
Functionalistic ethic	-0.60498	0.16310	0.026500	-0.25778000	0.1163	(ns)

Note: * = $p < 0.05$; (ns) = nonsignificant.

Summary

The results indicated that a relationship does exist between the social reconstruction variables of Kuypers and Bengtson, operationalized in the Perceptions of Learning Questionnaire, and the self-perceptions of learning abilities among older adults. A second area of analysis and correlation of demographic variables showed strength in most areas relating to perceptions of learning variables as well as the social reconstruction variables.

Hypothesis One posited no relationship between the six demographic variables and the social and learning variables. It was tested by deriving correlation coefficients for the demographic variables with social and learning variable scores. Out of 54 correlations of these variables 40 were significant. Gender was correlated with only one variable. The analyses supported a rejection of Hypothesis One.

Hypothesis Two posited no relationship among the social reconstruction variables with the social reconstruction variables. Twenty-six out of the 30 were strongly correlated with one another. The data supported a rejection of the null hypothesis and a conclusion that the social reconstruction variables were correlated.

Hypothesis Three stated that there are no correlations among the social reconstruction variables and a self-assessed learning statement, intellectual aging, and achivement motivation. A pattern of strong relations was found between the set of variables; therefore, Hypothesis Three was rejected.

Further data analyses were undertaken to identify which areas of the social reconstruction variables made significant contributions to the predictibility of the learning variables. Regression models were derived for each learning variable. The predictive power of the partial correlations was small but statistically significant. The health statement scores had small but significant power in predicting the learning statement. Powerful others had the most predictive power with intellectual aging though internality and chance were also statistically significant. Achievement motivation had three possible predictive variables of powerful others, internality, and the competency statement.

CHAPTER V
DEVELOPMENT OF A COGNITIVE RECONSTRUCTION MODEL

The results presented in Chapter IV indicated the social reconstruction model has correlation and predictive power with self-perceptions of learning among the older adults. There is statistical evidence that the social reconstruction variables have explanatory power with the learning variables. If the Kuypers and Bengtson syndrome has validity as a model of normal aging and explanatory power with the learning variables, then learning variables could be integrated into a possible social reconstruction syndrome.

Thomae (1970) described adjustment to aging as a function of the balance between cognitive and motivational structure of the individual. The individual reconstructs his world mentally in order to achieve balance between perceived situations and persistence in individual motives. Thomae added that in contemporary Western societies there is a chronical conflict between the heterostereotype of the aged as weak and incompetent and the self-concept as the aged view themselves as active and able. Most Americans react to this conflict by a marked change in self-perception. Involved is a shift in thinking of one's self as progressively physically and mentally handicapped, from independent to dependent, from aspiring to declining. The surrendering action is a cognitive reconstructuring, which social demand in the culture strongly enforces. The aged maintain and restructure the balance more and more by changes in the cognitive system instead of changes in the environment or motivational system. Instead of positive mental attitude and effort to overcome, they begin to accept the stereotype of weakness and incompetence. Kuypers and Bengtson call this social restructuring a vicious sycle. The cycle begins with breakdown perceptions before behavior is initiated.

Interventions into the vicious cycle of this cognitive readjustment or breakdown can also be depicted in a model. This "cognitive reconstruction syndrome" will be constructed and based on (1) the theories of Thomae (1970) and Kuypers and Bengtson (1973); (2) the inputs described in Chapter II from researchers as Sparks (1973), Bandura (1977), and Nuessel (1982); (3) conclusions from the data in this research using the questionnaire from the works of Lachman, Sherman, and Kuypers and Bengtston. Figure 4 shows the Cognitive Reconstruction Model.

Description of the Cognitive Reconstruction Model

The analysis of the relevance of the Kuypers and Bengtson social reconstruction syndrome to perception of learning has underscored how older adults are defined by society and then define themselves as incompetent and unable to learn. Like the social breakdown syndrome, the circular nature of cognitive breakdown and aspects of competence are interrelated.

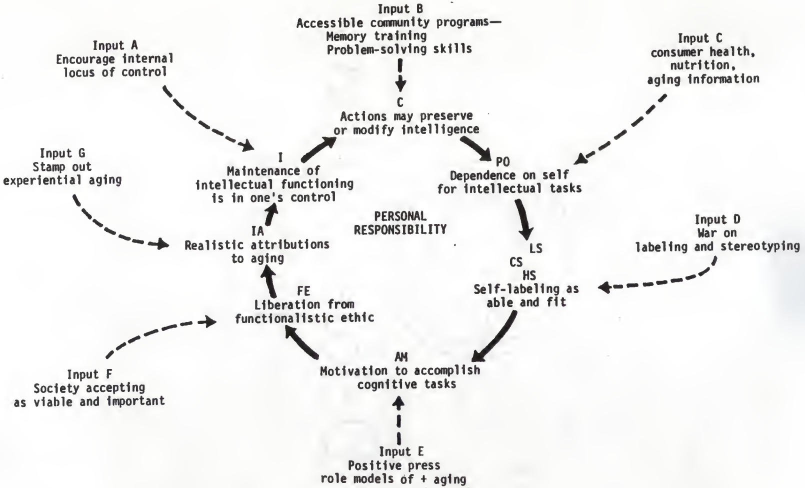

Figure 4. A cognitive reconstruction model

Seven elements in the cognitive reconstruction model have been developed around a theme of personal responsibility:

Responsibility for maintenance of intellectual functioning or internality (I): The major premise in this view is that people are responsible for and in control of their own destinies. Maintaining and controlling intellectual functioning are integral self-perceptions. These individuals who may be described as ones with internal locus of control are the masters of the ship and captains of their fate.

Responsibility for action to preserve or modify intelligence (C): The individuals must not only believe in personal responsibility, but must take overt action. They must actively seek to continue learning and meet new challenges.

Responsibility for intellectual tasks (PO): The individuals must depend on themselves and be in control of intellectual tasks and decisions. Although one may have various physical or other losses, self-determination and human dignity must be maintained.

Responsible labeling (LS, CS, HS): Individuals must fight the stereotypes that label elderly people as sick, incompetent, or "too old to learn new tricks." Personal ego strength must be developed to form positive mental attitudes and to reject the labeling of weakness and degradation.

Responsibility for motivation (AM) in cognitive tasks:

Persons must possess the equipment to cope with the world's demands. Building ego strengths, expanding awareness, and upgrading skills take determination.

Responsibility to defy the functionalistic ethic (FE):

This premise requires the most effort. It is not likely society will be willing to offer power and opportunity to the elderly people, whose roles are being withdrawn. Freedom from the social-worth-by-role ethic must be developed by redefining personal definitions of meaning and purpose.

Responsibility for realistic attributions of aging (IA):

Individiduals must understand what aging is and is not. They must constantly be on guard for attributions of deterioration to age which are only results of normal activity and living. Older adults must possess the equipment to perceive the world realistically and be able to cope with its demands.

Inputs into the Model

The cognitive reconstruction model illustrated in Figure 4 can be developed by a series of system inputs. The inputs described here expand the theme of personal responsibility to society's responsibility for cognitive reconstruction.

Input A encourages internal locus of evaluation. This view is not only for older people, but also for other society segments. For example, developing decision making powers in children and young adults enable a lifelong pattern to be continued in old age. Kuypers and Bengtson (1973) discussed this personal feeling of mastery and internal control extensively.

Input B expands the chance for one to act responsibility to preserve or modify intelligence. Accessible community programs as memory training, problem solving skills, and social intelligence training would be examples of input in this area.

Input C describes information agencies relating to maintaining independence. In the present study the powerful others variable correlated with internality (I) and had predictive power with achievement motivation and intellectual aging. Responsible dependence on self for intellectual tasks is an integral part of social as well as cognitive reconstructuring. Independence is important in the variables of intellectual aging and especially achievement motivation. Input C into the system has educational agencies that provide and disseminate consumer nutrition, health, and aging information and supportive services to assist in independence.

Input D describes an expanded war on labeling and stereotyping. Probably the most difficult to overcome, labeling comes in such subtle forms from many elements of society. Many sources are difficult to pinpoint and understand. Self-labeling includes the three variables, health statement, learning statement, and competency statement. Self-assessment of mental and physical ability is contributory to motivation to accomplish cognitive tasks. Respondents in this study were basically very positive when answering questions. Building on these positive labels is important rather than, as Thomae described, letting society force degradation upon them. Input D on the social labeling and consequent self-labeling is a war on ageism and stereotyping as described by Nuessel (1984).

Input E describes all the areas of society that would include encouragement of older adults to accomplish intellectual tasks. Bandura (1977) related achievement motivation to the belief that one is able. Input E from the system building on self-efficacy theory would encourage positive press, media, and role models of positive aging.

Input F describes society's responsibility for accepting elders as viable and important. Most social psychologists are pessimistic about any change in the functionalistic ethic. Responsible individuals are going to have to reverse the input to impact the idea on society.

Input G develops realistic attribution about aging in all elements of society. Sparks (1973) called for an antigerontology movement, in which experiential aging is stamped out. Incorporating items of aging in social and biological courses in schools should help students deal with their own aging. Magazine articles in the popular press should impact experiential aging.

The cognitive reconstruction model has described a cycle of personal responsibility for maintenance and development of intellectual tasks. The inputs and responsibility of society have been described. This systems model of cognitive restructuring has been presented to link individual intellectual competence in old age to reorganization of a responsible social system. The model characterizing cognitive reconstruction invites alteration of the system by intervention at any point. A benign circle rather than a vicious one may be created.

CHAPTER VI
SUMMARY, DISCUSSION, RECOMMENDATIONS

The purpose of this study was to analyze the extent to which the social reconstruction model explained variations in self-perceptions of learning abilities of older adults. A second area of analysis included the demographic variables. Chapter VI includes a summary of the research, discussion of the results, and recommendations for further research.

Summary

The study was conducted in Marion County, Florida, in July 1985. One hundred adults over 65 and retired were used in the analysis. To assure representation of the various groups in the study, a proportional stratified sampling technique was developed for data collection. The sample was selected in proportion to the size of each stratum in the population; thus, five were chosen from long term care facilities. Ten were from congregate facilities and 85 were living independently in the community.

The variables tested from the social reconstruction model were locus of control, self-related competence, self-rated health, and the functionalistic ethic. Locus of control was divided into three specific areas of internality, chance, and powerful others. The self-perception of learning variables were a self-assessed learning statement, intellectual aging, and achievement motivation.

The instrument developed in two parts. Part One consisted of demographic data of residence, age, gender, education, former work, and marital status. Part Two consisted of a questionnaire incorporating a self-rating of competence, health, and learning ability. Scales 1, 2, 3, 4, and 6 of the ADEPT PIC Inventory, and the functionalistic ethic questions developed by Sherman were chosen.

To collect the data, the researcher contacted nursing homes, congregate living facilities, and groups that worked with older adults. The activities directors of the institutions made lists of communicative clients. Fifteen clients were selected and interviewed. In the groups of those living independently, the researcher explained the purpose of the research, its implications, and instructions for completion. Small groups of individuals who lived independently were interviewed until 100 usable questionnaires were completed. A pilot study was conducted with a group from Rolling Greens, a retirement community.

Data collected were prepared for computer processing by the University of Florida Statistical Analysis System (SAS). Correlation coefficients of the demographic variables, the social reconstruction variables, and learning variables were calculated. Multiple regression analyses predicting learning variables by social reconstruction variables were tested for overall fit.

The results indicated a relationship does exist between the social reconstruction variables of Kuypers and Bengtson and the self-perceptions of learning abilities among older adults. A second area of analysis involved a correlation of the demographic variables with the perception of learning variables as well as the social reconstruction. Correlations showed strength in most areas.

Hypothesis One posited no relationship between the six demographic variables and the social reconstruction and learning variables. Correlation coefficients for the demographic variables with each social and learning variable score tested this hypothesis. Out of 54 correlations, 40 were significant at the 0.05 level or higher. Gender was correlated only with one variable. The analysis supported a rejection of Hypothesis One and a conclusion that in this sample demographic variables correlated with social reconstruction and learning variables.

Hypothesis Two posited no relationship between the social reconstruction variables with the social reconstruction variables. Twenty-six out of 30 were highly correlated with one another. The data supported a rejection of the null hypothesis and a conclusion that the social reconstruction variables were correlated.

Hypothesis Three stated there are no significant relationships among the social reconstruction variables and the self-assessed learning statement, intellectual aging, and achievement motivation. Significant relationships were found with the social reconstruction variables and each of the three learning variables. The statistical analyses permitted a rejection of Hypothesis Three and a conclusion that social reconstruction and learning variables were correlated.

Further data analyses were undertaken to identify which areas of the social reconstruction variables made signficant contributions to the predictibility of the learning variables. Regression models were derived for each learning variable. The predictive power of the partial correlation was small but statistically significant.

The statistical results indicated the social reconstruction model had correlative and predictive power with self-perceptions of learning among older adults. A model was developed integrating the learning variables into a possible social reconstruction syndrome. A cognitive reconstruction model was developed from the results of the study, the theory of Thomae, and models of Kuypers and Bengtson.

Discussion

There were many assumptions and unknowns underlying this study and its data. It was assumed, for example, that a random distribution of breakdown susceptibilities, exposure to stress or events and changes, and presence or lack of supportive maintenance among the participants existed.

The people in institutions had a more personal contact with the researcher than those in group administered tests. A basic pattern developed among these interviews which agreed with observations that individuals in institutions have very different perceptions from individuals living independently in community dwellings. Some of the questions were not pertinent to the lifestyle of people in care facilities. For example, when posed the statement, "When paying in a restaurant for meals or in a store for clothes, I am able to understand the bill," a man answered that he had not bought anything in four years since all his necessities were provided by the home. Responding to the statement, "I don't care whether I learn anything new," one woman replied, "Why should I? I just sit here all day." The researcher at first felt an error had been made to include these people in a study of learning perceptions until one person who was 86 said she would like to study Spanish and wished a class would be offered at the home.

The health and learning statements were not related to residence. These statements appeared together in the questionnaire and were straightforward questions asking the subjects to assess their health and assess their learning ability. The questions were similar in format and were composed of only one item; hence, possibly a tendency to react in a similar manner existed. Another explanation for the nonsignificance of the health statement and learning statement may be ascribed to the way the sample was chosen in the homes for coherence and ability to communicate. Fourteen of 15 in care facilities rated their health as good or very good. Compared to the present environment and in observing others around them, this relative assessment of good health was probably true. Thirteen out of 15 rated their learning as good with only two stating not too good.

The subscales of intellectual aging and achivement motivation represented complex, multifaceted measures that tapped not only the current assessment, but also planning for the future and an evaluation of the past. On the other hand, the learning statement simply was reflective of current mood and a general assessment of one as a learner.

Achievement motivation was somewhat different from the learning statement because the subscale developed by Lachman measured the desire to accomplish cognitive tasks or intellectual efficacy. Personality, drive, and determination made this a complex, multifaceted, and value-laden variable.

The functionalistic ethic and self-related competence statement have strong normative and self-evaluative elements. The locus of control had the three elements of internality, chance, and powerful others and reflected self-esteem in practical situations. The perceived health statement was apt to have been seen as somewhat outside the realm of personal responsibility and less likely to affect the other learning variables on the questionnaire.

A pertinent point is the relatively high zero-order correlation coefficients, but relatively low multiple coefficients in regression analysis for predictive power. These figures are not surprising in light of the diversity and complexity of life factors entering into such broad concepts as self-perceptions of learning.

The six reconstruction variables in this study reflect only part of the social reconstruction model, which includes predisposing factors of breakdown susceptibilities, stress factors, and availability of maintenance conditions. Yet, even without these additional factors the reconstruction variables showed some relevant statistical explanatory possibilities. The model is sufficient to demonstrate the potential heuristic value of generating useful hypotheses about learning perceptions among elderly adults in our society.

While a major objective of this study was to explore relationships between the social reconstruction variables and learning variables, the study was designed to permit inferences regarding the social reconstruction syndrome and self-perceptions of learning among the older adults. The social reconstruction model has value in explaining the social and psychological aspects of normal aging. The social reconstruction syndrome has explanatory power relating to perceptions of learning, intellectual aging, and motivation to learn. Since a relationship existed between the operationalized variables of social reconstruction and learning, then learning perceptions can be integrated into a possible social reconstruction syndrome. A "cognitive reconstruction syndrome" can be posited as one possible social reconstruction syndrome.

Learning perceptions while not specified in the Kuypers and Bengtson social reconstruction syndrome certainly fit into the cycle. The affective elements as how one perceives learning abilities, attitudes toward intellectual aging and motivation to learn are just now being studied as important factors.

Since the self-perceived learning variables have compatibility with the social reconstruction model paradigm, educational gerontologists and adult educators have a tool for prescriptive intervention. An alternative social reconstruction syndrome should include educators and professionals making a contribution to a cycle of social role performance, adaptations to environmental change, and especially to personal feelings of mastery.

Recommendations

The correlational analysis and regression data have indicated that the social reconstruction model has explanatory power with respect to learning. A more rigorous longitudinal study should test and demonstrate the power of the social reconstruction and learning variables.

Only four social reconstruction variables were chosen for this study. There are many variables in the social breakdown syndrome as predisposing factors of breakdown susceptibility, stress factors, loss, anxiety, depression, or availability of maintenance conditions. One or more of these items should be analyzed to see the extent of explanatory power with the learning variables of intellectual aging or achievement motivation.

The social reconstruction syndrome was a most promising heuristic model as it represented a comprehensive social-psychological framework that incorporates social system, self-concept, and labeling theories as might be applied to practical problems in society. Incorporating learning items in a cognitive reconstruction syndrome also has descriptive and prescriptive values. Descriptive hypotheses relating to the model should be most productive if undertaken in light of attribution, self-efficacy, and concept maintenance theories. The cognitive reconstruction model should be refined for more definitive and descriptive value.

The cognitive reconstruction model has potential for generating prescriptive hypotheses. Conducting a similar study with middle or pre-retirement adults should have value for those educators planning programs for retirement preparation. A cross-sectional study of young, middle, and older adults should indicate points of educational intervention.

Input points of the cognitive reconstruction model should be tested both cross-sectionally and longitudinally. For example, perceptions of intellectual aging should be tested before and after memory training or social intelligence training. An overall correlated model for a war on aging should be developed for mass media.

A new paradigm for the role of elderly adults in learning has been described. As Rosenmeyer (1980) asserted, these viable ideals must become visible and receive some social support. There is statistical evidence the social reconstruction syndrome of Kuypers and Bengtson has explanatory power among older adults. A cognitive reconstruction model has both descriptive and prescriptive possibilities. Concerted inputs into the social-cognitive system will give the new paradigm support and visibility. As Crosman and Gustav (1964) affirmed, educability is a crucial geriatric problem; adults educators must make a contribution to the solution.

APPENDICES

APPENDIX A
PERCEPTIONS OF LEARNING QUESTIONNAIRE

1. Age________________ 2. Sex______________

2. Education__________________

3. Former work_________________________

5. Marital status
   Married______________
   Single_______________
   Divorced_____________
   Widowed______________

6. How would you rate your health?
   Very good____________
   Good_________________
   Poor_________________
   Very Poor____________

7. Rate your own learning ability.
   Very good____________
   Pretty good__________
   Not too good_________

Please circle the number to indicate your thinking.

1. When paying in a restaurant for meals or in a store for clothes, I am able to understand the bill.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

2. I'd be able to keep an accurate record of my expenses so as to avoid financial problems.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

3. If I want to work at it, I'm able to figure out quite a few puzzles and similar problems
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

4. As long as I exercise my mind, I will always be on top of things.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
5. I know if I keep using my memory I will never lose it.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
6. It's up to me to keep my mental faculties from deteriorating	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
7. I could remember important telephone numbers if I practiced them.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
8. I have little control over my mental state.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
9. What I learn now is determined by what I was taught when I was younger.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
10. My problem solving ability depends on how healthy I am.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
11. There's no doubt it will become harder and harder for me to add and subtract numbers.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
12. It's inevitable that my letter writing ability will deteriorate.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
13. I have no chance to improve my thinking abilities at my age.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

14. There's nothing I can do to preserve my mental clarity.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

15. My mental acuity (sharpness) is bound to decline.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

16. It's inevitable that my intellectual functioning will decline as I get older.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

17. I wouldn't be able to figure out postal rates on a package without the postman's help.

1. Strongly
2. Agree
3. Disagree
4. Strongly disagree

---

18. I can't figure out sales prices of items unless someone helps me.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

19. In order for me to have a nutritional diet, a specialist would have to plan my meals.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

20. I need someone to help me when it comes to solving difficult puzzles or games.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

21. I can only understand instructions after someone explains them to me.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

22. I'd prefer another person to show me how to solve number problems rather than work them out myself.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

23. I'd call the T.V. network for the program schedule rather than try to read it on my own.

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

24. I couldn't learn to solve novel word problems without help.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

25. I don't remember things as well as I used to.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

26. The older I get the harder it is to think clearly.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

27. I'm just as good at puzzles as I ever was.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

28. I'm less efficient at managing my time than I used to be.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

29. I can learn new things as well as always.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

30. I used to be much better at working with numbers.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

31. I'm as smart as I ever was when it comes to defining words.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

32. It's becoming more hopeless to figure out complicated schedules as I get older.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

33. My letter writing skill has gone downhill.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

34. I think I'm just as good at number problems as I've always been.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Sgrongly disagree

---

35. I have to use a lot more mental energy for solving difficult problems now than I used to.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

36. I'm not as good at remembering telephone numbers as when I was younger.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

37. I really don't care whether I learn anything new.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

38. It's important that I am very accurate when working with numbers.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

39. I have no desire to fill out my own tax forms.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

40. I'm highly motivated to learn new things.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

41. Keeping a close watch on my diet is important and worthwhile to me.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

42. If I studied a map carefully I could figure out how to get around in a strange place.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

---

43. I take a great interest in solving puzzles.
   1. Strongly agree
   2. Agree
   3. Disagree
   4. Strongly disagree

44. It means a lot to me to be able to write coherent letters to my friends and family.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

45. It's no use teaching me new tricks; I'd rather stick with my old ones.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

46. I'd like to be good at solving word problems.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

47. It gives me great satisfaction to read on a wide range of topics.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

48. I'm interested in figuring out how to get the most for my money when shopping.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

49. It's important to me that I be able to function on my own.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

50. A person isn't worth much when he or she is no longer to carry on as a productive member of a community.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

51. A person's worth does not depend on how good a citizen, parent, or worker but simply that he or she is a human being.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

52. Unless I feel that I have accomplished or done something that other people value, I feel quite worthless.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

---

53. When you are no longer a contributing member of society by functioning in such roles as worker, parent, you cannot really feel you have any value as a person.
1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

APPENDIX B
INSTRUCTIONS FROM THE ADEPT PIC INVENTORY

On the following pages are statements about how you feel or think about certain situations. Read each statement and select the answer on the right which best reflects what you believe is true for _you_ in the given situation.

Circle the number in front of the answer which indicates the extent to which you agree or disagree with each statement. There are no "right" or "wrong" answers—we want to know which choice best describes you in each case. Be sure to answer every question.

Here is an example:

1. I like to read mysteries	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

Circle the number of the answer choice that best describes you. If you especially enjoy reading mystery stories, you would circle number 1. If you dislike mystery stories and never read such books you would circle number 4.

Now try another example:

2. I'll never be able to learn to type well.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

If you already know how to type well you circle number 4. However, if you can type but think you could improve you might circle number 3. Circle number _1_ if you believe you never will be able to type well.

(turn to page 2)

As you answer the items on the next pages, please keep these points in mind:

1. When you feel you can, please choose either the number 1 or the number 4. That is to say, try to avoid choosing the middle answers all the time, unless, of course, that is the best answer.
2. Do not spend too much time thinking about your answer. Give the first natural answer as it comes to you, describing yourself in the given situation.
3. Answer every question, even if it doesn't seem to apply to you very well.
4. Be as honest as possible about what is true of you.
5. Circle the number in the right column that corresponds to your answer.

DO NOT TURN THE PAGE UNTIL ASKED TO DO SO.

APPENDIX C
KEY TO
PERCEPTIONS OF LEARNING QUESTIONNAIRE

Scoring: This key indicates how the scoring of the questionnaire was done. Each scale is indicated and the - means counting begins with number 4 as 1; + indicates number 1 is one. For example, in scoring the 7 internality items, all responses are counted with number 4 as 1.

INTERNALITY
1. -
2. -
3. -
4. -
5. -
6. -
7. -
CHANCE
8. -
9. -
10. -
11. -
12. -
13. -
14. -
15. -
16. -
POWERFUL OTHERS
17. -
18. -
19. -
20. -
21. -
22. -
23. -
24. -
INTELLECTUAL AGING
25. +
26. +
27. -
28. +
29. -
30. +
31. -
32. +
33. +
34. -
35. +
36. +
ACHIEVEMENT MOTIVATION
37. +
38. -
39. +
40. -
41. -
42. -
43. -
44. -
45. +
46. -
47. -
48. -
COMPETENCY STATEMENT
49. +
FUNCTIONALISTIC ETHIC
50. -
51. +
52. -
53. -

APPENDIX D
DEMOGRAPHIC VARIABLES OF EACH PARTICIPANT

Key: Residence: 1 = Living in long term care or congregate facility
2 = Living independently

Age: In years

Sex: 1 = Male
2 = Female

Former work: 1 = Previous vocation as blue collar type
2 = Previous vocation as white collar or professional type

Education: In years

Marital Status: 1 = Married
2 = Not married (single, widowed, or divorced)

Subject	Residence	Age	Sex	Former Work	Education	Marital Status
1	1	88	2	1	8	2
2	1	65	1	1	12	2
3	1	82	2	1	5	2
4	2	77	2	2	13	2
5	2	65	2	2	14	1
6	2	74	2	2	15	2
7	2	75	2	2	17	2
8	2	65	2	2	14	2
9	2	70	2	2	12	2
10	2	67	2	1	13	1
11	2	80	2	2	12	2
12	2	68	2	2	16	2
13	2	74	2	2	15	2
14	2	71	2	2	14	2
15	2	75	2	2	12	2
16	1	87	2	1	10	2

Subject	Residence	Age	Sex	Former Work	Education	Marital Status
17	1	99	2	1	12	2
18	1	85	2	1	8	2
19	1	86	1	2	9	2
20	1	69	1	1	6	2
21	1	84	2	1	10	2
22	1	87	2	1	10	2
23	2	65	2	2	13	1
24	2	65	1	1	10	1
25	2	70	2	2	14	1
26	2	78	2	1	12	2
27	2	69	1	2	12	1
28	2	72	2	1	5	2
29	2	73	2	1	8	1
30	2	77	2	1	9	2
31	1	76	1	1	8	1
32	2	65	2	2	11	1
33	2	74	1	2	14	1
34	2	65	2	1	9	2
35	1	76	2	2	12	2
36	2	68	2	1	12	1
37	2	75	2	2	12	1
38	2	69	2	1	10	2
39	2	70	2	2	13	2
40	2	70	2	1	9	2
41	2	92	2	1	12	2
42	2	69	2	2	12	1
43	2	69	2	2	12	1
44	2	69	1	1	12	1
45	2	78	2	1	10	2
46	2	67	2	2	12	1
47	2	71	1	1	9	1
48	2	83	1	2	12	1
49	2	75	2	1	10	1
50	2	75	1	2	14	1
51	2	68	2	2	10	1
52	2	68	2	1	13	1
53	2	73	2	2	12	1
54	2	76	1	2	12	1
55	2	77	1	2	12	1
56	2	71	1	1	10	1
57	2	73	2	1	12	1
58	2	73	2	2	12	1
59	2	69	2	2	16	1
60	2	80	1	2	12	1

Subject	Residence	Age	Sex	Former Work	Education	Marital Status
61	2	87	1	2	16	1
62	2	70	2	2	13	1
63	2	67	2	1	8	2
64	1	78	2	1	8	2
65	2	74	1	2	19	1
66	2	65	1	2	11	1
67	2	67	1	2	12	1
68	2	74	1	2	16	1
69	2	65	1	2	17	1
70	2	79	2	1	12	2
71	2	74	2	2	12	2
72	2	71	2	2	12	2
73	1	86	2	1	8	2
74	2	74	1	1	10	1
75	2	72	2	1	10	1
76	2	68	1	2	16	1
77	2	71	2	2	10	2
78	2	69	1	2	16	2
79	2	65	1	2	13	2
80	2	70	2	1	8	2
81	2	72	1	1	10	2
82	2	66	2	1	10	2
83	2	76	2	2	16	2
84	2	68	2	2	12	2
85	2	65	2	2	12	2
86	2	78	1	1	7	2
87	2	65	1	2	12	2
88	1	82	2	1	9	2
89	2	78	2	1	12	2
90	2	73	1	2	12	2
91	2	73	2	2	13	2
92	2	74	1	1	12	2
93	2	72	1	2	12	2
94	2	71	1	2	14	2
95	2	67	2	2	14	2
96	2	70	2	2	17	2
97	2	90	2	2	13	2
98	2	71	2	2	17	2
99	2	78	1	2	16	2
100	2	82	1	2	16	2

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BIOGRAPHICAL SKETCH

Evelyn June Kelly was born in Knoxville, Tennessee, October 28, 1934. As a pre-medical student, she graduated with the degree of Bachelor of Arts in English and history from the University of Tennessee. She received the degree of Master of Religious Education from the Southern Baptist Theological Seminary, Louisville, Kentucky, in 1956. The same year she married Charles L. Kelly and moved to Gainesville, Florida. She has four children, Sharlene, Kurt, Natalie, and Marsha.

In 1965 she began substituting in Broward County schools and received a teaching position that same year. Moving to a farm in Marion County, she has for the past 20 years been involved in adult education and science and health education. She received teacher certification from Florida Atlantic University and certification in school administration and supervision from the University of Florida.

June has had a lifelong interest in writing and has had articles appear in Home Life, Mature Living, Instructor, Living with Children, Living with Preschoolers, and Science Scope. She has written several course guides and in 1981 received an award as Energy Educator of the Year for the guide, "Future Aware." She is co-author of the Marion County curriculum on human growth and development.

Her interest in writing led her to the University of Florida to begin work on the degree of Doctor of Philosophy in the summer of

1983. The area of gerontological education has special appeal and she will receive a certificate from the Center of Gerontological Studies. Although she is an enthusiastic teacher and speaker, she especially desires to expand her writing career specializing in health-related and gerontological topics.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

James W. Hensel

James W. Hensel, Chairman
Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Gordon D. Lawrence

Gordon D. Lawrence
Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Hannelore Wass

Hannelore Wass
Professor of Foundations of Education

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1985

David C. Smith (N)

Dean, College of Education

Dean, Graduate School

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